MICROFILM

START OF ROLL

ROLL NO.

141

Construction Contracts

Begins # 7276 folder #5
(continues from reel 140)

I-405-8(17) Fremont Bridge Section, of 1970
303 Stadium Freeway in Portland.
#7276 (Superstructure) Folder #5

FORM S-80 (REV. 10-69)

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
July 26, 1972

SUBJECT: Murphy Pacific Price Agreement
Fremont Bridge Modification

To: V. E. Skoog
Controller

OFFICE

From: Jess Jones
Utility Auditor

The original estimate for $5,506,518 was presented to the State on May 9, 1972. On May 11, 1972, a complete analysis of these costs was made in the Resident's office at the job site. Presenting the costs for the company were Mr. Al Tokla, Superintendent, and Mr. Jim Riffel, Engineer-Estimator. Representing the State were Mr. Al Rear, Field Bridge Engineer, Mr. Bob Cunningham, Resident Bridge Engineer and myself. Each item of cost was discussed individually, and all components were identified.

Analysis

Four days were spent analyzing these findings and separating contingencies and overheads from estimated actual costs. Minor exceptions were suggested in a few areas.

Basically, the accuracy of the offer was an engineering determination as to the required units of labor, equipment, and materials necessary to implement the modification. Mr. Rear and Mr. Cunningham and his staff have spent several weeks making this study. They were further aided by the actual time, material, and equipment required to install the first two tie girders.

They also made studies of heavy equipment rentals and costs. These findings were referred to Mr. C. E. Layton, Oregon State Highway Division rental rate specialist.

Minor changes in the work have also been incorporated into the agreement.

Mr. Rear has completed a detailed documentation of all studies and findings. Exceptions suggested by Accounting and rental rates approved by Mr. C. E. Layton have been incorporated into the offer to Murphy Pacific.

Conclusions

This documentation is considered reasonable and equitable to support the price agreement which is $201,443 under Murphy Pacific's original offer.

The study of costs completed during the period of May 11 to May 16 and a re-examination and comparison of Mr. Rear's documentation appear to satisfy all requirements of PPM 30-11.

APPROVED
W. E. Skoog
W. E. SKOOG

JJ:bg

FREMONT BRIDGE SUPERSTRUCTURE

INCREASE OF CONTRACT TIME

Price Agreement No. 14 includes an extension of contract time from 860 calendar days originally specified to 1453 calendar days. This is an increase of 593 calendar days which extends the contract time to the presently anticipated completion date of July 15, 1973. Because of delays caused by three fractures involving machined junction pieces which are a part of the connection between the tie girder and arch rib and other delays encountered at various times, the contractor is entitled to additional contract time.

The following analysis covers delays which were beyond the control of the contractor and which caused interruptions which required project rescheduling and resequencing:

A. Prior time extensions.

Two separate previous time extensions total 109 days.

Federal Highway Administration letter of January 17, 1972, allows a thirty-one calendar day extension covering miscellaneous delays. Federal Highway Administration letter of February 14, 1972, allows a seventy-eight calendar day extension covering time required for the contractor to locate a foundry capable of making the castings. This delay resulted from a revision in the specification for the quality of the castings. In effect, this revision changed the castings from bridge quality to x-ray quality and greatly limited the number of foundries capable of producing same. The change, in form of a letter of addendum to prospective bidders was received by bidders six days prior to the bid opening date of June 26, 1969. Because of the late date and significance of the change the contractor was allowed seventy-eight extra days to locate a capable foundry.

Previous time extensions total 109 days.

B. Girder fracture revisions

As a result of the fracture of the left tie girder in the west back span (Panel Point 3) during erection, the contractor suffered delay and was required to revise his construction schedule and sequence of operations. The over-all effect of this is to delay completion and opening of the structure to public use. The girder fracture occurred on October 28, 1971, and it is estimated that the girder will be repaired and restored by early January, 1973. In other words a period in excess of 14 months is required to restore the west backspan to the condition existing just prior to the crack. During the period the contractor did not quit working but revised his schedule and sequencing to allow continued construction wherever possible. This continued production had an offsetting effect on the total delay time and resulted in a shorter overall delay period. The best method of determining the extent of the actual delay caused by the fracture and necessary revision work is by pinpointing the date on which float-in of the main span could have been started if the break had not occurred and when it will actually begin because of the delay. The difference is the realistic time extension to which the contractor is entitled.

The contractor's progress schedule, dated 8/18/71 (prior to the fracture) indicates that float-in of the center span would have begun April 15, 1972. (See attached) The contractor's CPM diagram dated 4/20/72 (after the fracture) indicates float-in would begin about December 26 with jack-up starting right after the first of the year (see attached). Because of the weather hazards, the holiday season and the importance of this phase of construction, it is more realistic to believe the float-in will begin January 2, 1973, with jack-up and connection following as continual sequential stages of a highly technical process without a holiday in between.

The period April 15, 1972, through January 2, 1973, is a period of 262 calendar days. This represents the delay period for which the contractor is entitled to an extension of contract time.

Contractor delayed 262 days.

C. Foundry production.

This delay resulted from casting problems encountered by the foundry which poured the castings and is in addition to the previously approved time extension covering delays in locating a foundry capable of performing the work.

The foundry experienced considerable difficulty in the production of acceptable castings. Eight castings were rejected because of core shifts (3) and cracked castings (5). The core shifts were caused by excessive force applied to the cores by the molten metal. This required a design change to allow use of steel inserts and cored holes in the walls of the castings in order to prevent further shifting and a redesign of the center plate to prevent continued cracking. Normally when large multiple castings are required preliminary individual castings are made for evaluation of procedures. Because of the delay in locating a foundry to do the work and the tight delivery requirements initial single pilot castings were not possible. This resulted in multiple rejection of faulty castings since problems with the first piece poured were not known until after subsequent pieces were poured. All pieces suffered from similar problems. Eventually the technical problems were solved and satisfactory castings produced.

Considering the doctrine of impossibility set forth in the legal opinion by Chief Counsel, L. I. Lindas, in his letter of December 17, 1971, the contractor is entitled to additional time because of the problems associated with foundry production of the castings. The effect of overlapping multiple rejections and the offsetting effects of continuing work in other areas of the project make determination of the exact delay time very difficult. Engineering judgment indicates that a reasonable extension which would encompass all circumstances would be the period from the date of pouring the first casting to the date of pouring a satisfactory replacement for this first casting.

The attached chronological history of casting indicates that the first shoe (top piece #1) was cast 1/23/70 and its acceptable replacement (top piece #7) was cast 4/24/70 or 91 days later. This represents the reasonable delay period for which the contractor is entitled an extension of contract time.

Contractor delayed 91 days.

Note:

Granting a time extension based on a delay in foundry production could normally lead to a claim from the contractor for additional production costs. This has been precluded by the third paragraph of page 2 of price agreement no. 14 which reads as follows: "In consideration of the above time extension the contractor agrees not to claim additional compensation for the work of casting the bearing assemblies at piers 1E and 1W."

D. Panel point 3 revision.

On August 21, 1970, a crack occurred in one of the machined junction pieces which connect this arch rib to the tie girder at Panel Point 3. The crack occurred at the machined re-entrant corner during fabrication of the lower girder flange. The crack extended across the full width of the flange and nearly through the thickness of the piece. The crack focused attention on the piece and the notch incorporated in its design. In addition to repairing the crack by welding the piece and all similar pieces in other girders were re-machined to eliminate the notch. Stress relieving the welds incorporating the piece into the girder flange was also deemed necessary. The re-machining and stress relieving was done by the contractor under a price agreement. Work on a total of four pieces with the resulting production and scheduling delays until November 22, 1970, entitle the contractor to additional time.

Contractor delayed 94 days (August 21, 1970 to November 22, 1970).

E. Bearing assembly plate location.

The main bearing plates at piers 1E and 1W were placed by others and subsequently found to be in error and were rejected by the contractor in June, 1970. There was no urgency to correct this condition as castings were not available. The State and the contractor proceeded in an orderly manner to determine the best method of repairs to correct the situation.

The order to proceed with corrective work would be required by January 11, 1971, or the project would be held up by the number of days that the order to proceed was delayed. The contractor was notified to proceed on January 21, 1971, with the corrective work. This is a total of eleven days delay.

The corrective work was completed prior to the arrival of the first available lower casting. This would indicate that the project was not delayed by the error in the bearing assemblies. This is not correct in that the contractor's engineers and supervisors spent a portion of their working time in the search for a method of repair.

The delay caused in this area is influenced by the ripple effect of delays in other areas and is difficult to determine. However, a determination based on engineering judgment tempered with consideration of the eleven day delay in receiving the notice to proceed with corrective work and the interaction of other delays indicates that a thirty day extension of time for the additional work of revising the main bearing plates is equitable.

Contractor delayed 30 calendar days.

F. Weld Repair - Girder 205-GIR

After shipment to Portland, cracks were found in the welds of the girders. Such cracks are the responsibility of the contractor.

June 25 letter of Murphy Pacific from the Resident Engineer rejected the girders and asked for a repair procedure. The request for a repair procedure was stopped by a phone call on June 28 to allow the State time to study the problem.

Mr. Merchant's letter of July 16, 1971, to the contractor rejected the weld and requested a repair procedure. On Tuesday, July 20, 1971, the Resident Engineer read Mr. Merchant's letter to Jay Murphy as he had not received the original at that time. The Resident Engineer received a call from Jack Geer on the afternoon of July 20 stating that they had started preparing a weld repair procedure. The Resident Engineer's letter of July 29, 1971, states that the visual defects of the welds were removed by arc air gouging and also accepted the contractor's weld repair procedure. The repaired girders were accepted August 5, 1971 and 205 GIL was erected August 6, 1971.

As stated previously the responsibility for the cracked weld is the contractor's in accord with article 410-3.22-(110) Standard Specifications 1964.

The State used 34 days from June 25, 1971 (date of first rejection) to July 29, 1971 (date the weld repair procedure was accepted) to explore the extent of the crack and alternative repair procedures. The contractor was able to do work within this period but it was not critical to the progress of the project. The release of the falsework is the critical item and was held up by the delay.

Contractor delayed 34 calendar days.

The time indicated above totals 620 calendar days

Because any delay in one area of the work affects many other areas and because the contractor, although delayed, did not stop work but revised his schedule and sequencing to allow a continuation of work wherever possible, it is very difficult to itemize the ripple effect of each delay. Due to the significance of the delays encountered on this project and their complex and indeterminate ripple effects it appears prudent that a contract time extension based on engineering judgment and sufficient to allow completion of the project be allowed. Current engineering judgment indicates that all work will, unforeseen circumstances notwithstanding, be completed by July 15, 1973. This in effect is an increase of 593 calendar days in the time required to complete the project. This increase is less than the 620 calendar day delay itemized above and allows for ripple effects as well as compensating offsets due to schedule changes and continuing work wherever possible. Due to the circumstances involved and the difficulty in computing actual ripple effect delays and offsetting credits for schedule changes a revision in contract time extending the completion date to July 15, 1973 (an additional 593 calendar days) appears equitable.

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

TO : Mr. George M. Baldwin, Administrator of Highways
Salem, Oregon

DATE: July 18, 1972

In reply refer to: 10-35.6

FROM for G. L. Green, Acting Division Engineer
Salem, Oregon

Hall Hand
Answer reply

SUBJECT: Oregon Project I-405-8(17)303
Repair Plans, Panel Point 3 Fracture

Mr. Edwards' letter of July 7 submitting the history, data, and Price Agreement No. 14 for the repair of Panel Point 3 fracture of the Fremont superstructure has been received. The report will be reviewed and submitted to both our Regional and Washington office bridge people before a decision on participation can be made.

In this submittal, a drawing, No. 28278, was transmitted showing the details of the Panel Point 3 revision. The Federal Highway Administration has worked with you and your consultant in the preparation of these plans, and they are acceptable. Approval is hereby given for correction of the remaining similar joints.

As we understand, the 1964 Standard Specifications apply to this change of which under Article 410-3.23, flame cutting and grinding will be required in the intersection between the old web plate and the newly added joint. Grinding in this area will be accomplished under American Standards Association's surface roughness rating of 500 which is acceptable to the Federal Highway Administration.

We assume that your instructions to the contractor will include considerations found critical in the metallurgist report. Flaw size should be inspected using x-ray and ultrasonic means. If no such requirements are to be specified, we would like an explanation as to your reasons. Any welding procedures should be carefully reviewed by the State and consultant and approval given before work is started. Other items such as rolling in the direction of stresses and no heat straightening should be appropriately outlined.

Your matrix analysis is interesting, and we note a very minimal percentage is assigned to the contractor for fabrication. It would appear that the fabrication assessment should be more the contractor's responsibility and none allocated to [illegible] More

(more)

RECEIVED
JUL 21 1972
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
TOM EDWARDS

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

GPO 917-

comments on the matrix will probably be made later.

Under the price justification section, we have several comments that need clarification:

(1) Accompanying this section should be a pre-audit evaluation or certification of the contractor's estimate in accordance with PPM 30-11 and your approved procedure outlined under Mr. Klaboe's March 20 inter-office memorandum.

(2) The labor for cost justifications will be reviewed in depth by our bridge section in the next few days to confirm your figures.

(3) Duplications of payment occur in the assigning of labor and operated cost of equipment. This should be corrected.

(4) Verification of outside equipment quotes must also be supported.

(5) The support for heavy equipment rental rates is unrealistic. These prices are based on scaled-up hourly rental rates, and it is obvious that such equipment will be used on a monthly basis. This discrepancy in the support data should be corrected and based on monthly rates.

(6) Materials justifications will be reviewed by our bridge section along with the labor review.

(7) The subcontract data should be made available to our bridge section during their review. We question the 2-year escalation cost when only one year has been added to the construction. The contractor's subcontract with Richardson and Gordon was not under control by State people, and some explanation of claim validity or acceptance of the contractor-invoked restrictions is desirable.

The time extension you require does not seem to include our February 14 letter signed by Mr. Simpson allotting more time. We are confused as to the amount of time requested in view of this extension.

Your comments and the resolution of the above items should expedite your submission to our Regional and Washington offices.

RECEIVED

Gin. Like S

FORM 734-2001 11-67

7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

NOTED
A. E. JOHNSON

Salem, Oregon
August 23, 1972

To: MEMO TO FILE

SUBJECT: Fremont Bridge Repair
Contract #7276

In connection with overhead welding being performed in the final assembly of repair units panel point 3, on Monday, August 21 I called Mr. Lou Silano of PBQ&D to get his reaction to this type of welding on the critical 5/8" fillet welds for attaching the tie girder 3 1/4" bottom flange to 2 3/4" webs. Mr. Silano was not in town but Mr. Mike Abrams said he would be in telephone contact with Mr. Silano Tuesday morning and would raise the question.

Mr. Abrams called back Tuesday morning at 10:30 PDT. Mr. Silano was not overly concerned with the idea of using an overhead weld for the proposed connection, but he would require that a modified assembly sequence be submitted by American Bridge, accompanied by an overhead weld procedure specification and the appropriate weld procedure qualification tests and welder qualification tests for overhead welds. Work is not to be stopped pending approval of the proposals, but proposals are to be expedited.

This information was passed on to Mr. Larry Lowe, California Materials & Research Department, Berkeley, at 11:30 AM. The specific tests required as discussed with Mr. Lowe were:

1. Overhead weld procedure test complying with Figs. 1 & 2 of Special Provisions using design section and design weld size. Tests include band (Keyhole), Macro etch, fracture & hardness. (Justification is 1964 Standards, page 345, change PO 9; Special Provisions, page 28, paragraph 1; Special Provisions, page 29, paragraph 1; Fig. 1 & 2.)

2. Overhead weld welder test complying with Fig. 1 of Special Provisions using 3/8" base plate and 5/16" weld. Tests include fracture test and Macro etch test. (Justification is 1964 Standards, page 345, change PO 9; Special Provisions, page 28, paragraph 1; Special Provisions, page 29, paragraph 4, as modified by letter from PBQ&D to Murphy Pacific.) (Mr. Lowe advised me that these tests have been performed and passed.)

Mr. Ahrens also mentioned that Mr. Seeds had called him concerning tests on a 1/2" fillet weld. The Fig. 1 & 2 specimens had been prepared and the bend (Keyhole) test had been performed successfully. Mr. Ahrens informed Mr. Seeds that the Macro etch, fracture test and hardness tests needed to be performed.

Mr. Lowe commented that he had investigated the "hs" plates dimensional problems and found that Mr. R. D. Cunningham, in a telephone conversation with Mr. A. J. Tokola, Murphy Pacific, Portland, on Friday, August 18, had authorized the incorporation of these plates into the assemblies without changes in the hole placement. Subsequent adjustments would be performed in Portland.

JOHN C. JENKINS
Engineer of Materials & Research

JCJ:ab

cc: Tom Edwards
A. E. Johnson
W. J. Hart
H. S. Coulter
R. D. Cunningham
E. J. Rief
Lou Silsmo, PBQ&D
E. F. Nordlin, State of Calif.
Larry Lowe, State of Calif.

RECEIVED
AUG 24 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

RECEIVED
AUG 21 1972
FOR FILING

RECEIVED
STATE HWY ENGR
AUG 22 '72
REFER TO
FOR

OREGON STATE HIGHWAY DEPARTMENT

7276

August 21, 1972

NOTED
TOM EDWARDS

Mr. E. F. Nordlin
Materials & Research Engineer
California Division of Highways
5900 Folsom Blvd.
Sacramento, California 95819

Re: Fremont Bridge Repair
Contract #7276

Dear Mr. Nordlin:

On July 17, 1972, Mr. W. J. Lowe of American Bridge Division proposed to the Oregon State Highway Division certain weld repair procedures for Plate Defects. These procedures, slightly modified, were accepted by Mr. W. J. Hart, Bridge Engineer on July 28, 1972. Copies of these procedures were sent to you, Mr. Larry Lowe, and others.

One point that was not specifically covered, either in the original submittal by Mr. W. J. Lowe, or in our response, has to do with one measure of edge discontinuity to be repaired under Part III of the procedures. Discontinuities which are visible without the use of penetrant dye or magnetic particle are to be repaired as indicated in Part III. If small inclusions are not visible except with dye or magnetic particle, they do not need repair.

For example, a discontinuity of Type b.1 (depth between 1/8" and 1") might be detected visually and, in the process of repair, magnetic particle might show several other discontinuities in the vicinity. Since these smaller discontinuities were not visible without magnetic particle inspection, they do not need repair.

It was agreed that ASTM A20-71, Sect. 8.3.1 would be the basis for rating edge discontinuities.

Several other items were discussed with Mr. J. Peterson, Berkeley Office of Materials and Research, by phone on August 18. The following confirms these discussions.

Mr. Peterson verbally forwarded a proposal from American Bridge for closure of surplus holes in splice plates PM 4 and PM 5. The proposal as we understood and approved it, for two holes in the PM 4 plate, was to (1) countersink on a bevel from side 1 to 1" depth, (2) using specified preheat and E7018 electrode, fill from side 1, (3) turn plate over and back gouge from side 2 to sound metal, (4) fill side 2, (5) grind both surfaces flush with base metal, (6) ultrasonically and radiographically inspect repair. The procedure for plate PM 5, one hole with 1/4" of metal between the edge of the hole and the edge of the plate, was to (1) remove the 1/4 inch of metal between the edge of the hole and the edge of the plate, using flaring sides on the cut, (2) using specified preheat and E7018 electrode, fill the cavity from the remaining edge of the hole to the edge of the plate, (3) grind repair flush with the plate surfaces, (4) ultrasonically and radiographically inspect the repair. Mr. Peterson was asked to have American Bridge confirm their proposal in writing.

We also asked Mr. Peterson to check the distance between the centerline of holes and the edge for those holes in MP 4 & 5 adjacent to the edge.

When Mr. Rief was in South San Francisco on August 22 through 24 he discussed requirements for 100 cp lighting for painting. On checking in Salem, we were unable to find reference to 100 cp lighting in the applicable specifications; we therefore asked Mr. Peterson to see if he could find the reference, and to hold up any enforcement of this requirement with regard to American Bridge until the point is clarified.

We asked Mr. Peterson to check on the possibility of edge discontinuities becoming a problem during the week end of August 19-20 so that if a decision were needed, it could be obtained while personnel were still available. Mr. Peterson responded with an indication that no discontinuity problems were anticipated, but this is not something that can be anticipated very far in advance.

Late Friday it developed that something was wrong with the "hs" plates. The holes in the splice areas at the ends of the plates were apparently in the wrong place. We asked Mr. Peterson to determine the details of this problem and the distances between the end splice holes and the hanger connection holes. If the relative distances between these groups of holes, and other key features of the "hs" plates, are in error, we would like to know what procedure American Bridge has in mind for rectifying the error.

Mr. Peterson furnished certain Charpy impact, hardness and tensile test data on 3 1/4" plate before and after heat treating. This data showed that the furnace stress relief procedure used was not detrimental to the impact and tensile properties of the steel.

The hardness of the burned surface seemed to be greatly reduced. Based on this information, permission for American Bridge to proceed with stress relief of 3 1/4 plates with burned edges was granted. Mr. Peterson was asked to obtain additional information: (1) the heat-time schedule, (2) BHN on the base metal of heat treated sample, (3) BHN on the non-heat treated material cut edge and base metal.

Item 33 (unmarked) of the items which Mr. Rief discussed with Mr. Peterson involved examination of radiographs by Mr. Joe Watson of Conam Inspection. Mr. Peterson is requested to tell Mr. Watson that if the present film quality holds up, it will be unnecessary for Mr. Watson to review film series 7 and 8. (In this regard, it should be noted that Mr. Watson felt that the quality of equipment and process evidenced in the earlier series of radiographs produced by American Bridge was so low that the film should have been rejected with no attempt to interpret it.)

Very truly yours,

GEORGE M. BALDWIN
Administrator of Highways

By John C. Jenkins

JOHN C. JENKINS
Engineer of Materials & Research

JCJ:eb

cc: Tom Edwards
A. E. Johnson
W. J. Hart
M. S. Coulter
R. O. Cunningham
E. J. Rief
M. A. Schell, FHWA
Larry Lowe, State of California
Murphy Pacific, Portland
American Bridge, Los Angeles

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Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

TO : Mr. George M. Baldwin, Administrator of Highways
Salem, Oregon
7276
Attention: A. E. Johnson

DATE: August 9, 1972

In reply refer to: 10-35.6 / 407.5

FROM for G. L. Green, Acting Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge
Upper Deck Heating System

cy Wall Head w/reports 8-11-72

We agree that upper deck heating should be considered on the Fremont orthotropic section. Frosting or icing with the expected traffic would present a very hazardous condition.

Within the last week, two articles have been received on this subject. One by the State of California titled "Bridge Deck Frosting, Valley Environment" describes the heating system for an orthotropic structure using two 240,000 BTU heaters with air blowers. Note that this system is equivalent to about 53 BTUs per square foot with an operating cost of $0.036 per s square foot. Obviously this figure would be higher for the proposed structure. (See pages 29 and 30.)

In the report "Nuclear Waste in Comparison with Other Heat Sources for Deicing of Bridges, Ramps, and Pavements," the summary on Page III-2 might be helpful in estimating costs provided the proper additive factor is applied for 1972 prices. On Pages I-2 and 3, items to consider are outlined. Most of these items have been outlined in Mr. Cunningham's analysis.

Your point is well taken, and we will forward your request with our recommendation for acceptance to our Regional office for their comments.

Enclosures (forwarded to Bridge - To be returned to Al Johnson) 8-11-72
NOTED
TOM EDWARDS
"Bridge Deck Frosting, Valley Environment;" November 1971
"Nuclear Wastes in Comparison with Other Heat Sources for Deicing of Bridges, Ramps, and Pavements;" September 14, 1970

8-10-72
AEJ to proceed
al

RECEIVED
AUG 10 1972
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

GPO 917-344

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

SUBJECT	FHWA NOTICE
Nuclear Wastes in Comparison With Other Heat Sources for Deicing of Bridges Ramps and Pavements	

July 19, 1972

HRS-41

The attached report was developed by the Dynatherm Corporation and summarizes the results of Phase I of the subject research study. This study (1) investigated the performance and cost-effectiveness of varied nonchemical bridge and roadway deicing systems installed throughout the United States and (2) compared these existing systems with the predicted performance and cost of a system using the decay heat of fission products and a system using the stored heat of the earth itself.

Report Summary

The report concluded that: (1) None of the existing systems for nonchemical deicing can be considered general solutions to the problem for a variety of reasons. (2) The system using the natural heat of the earth seems to have the lowest annual operating cost. (3) A system using fission products has many technical problems inherent in any project using potentially dangerous fission products. (4) The system selected for further detailed design and study is one using the natural earth as a heat source.

Application of Findings

This report could be of value in deciding what type of non-chemical deicing system to install in any problem area a State might have where such a system could be justified.

Charles F. Scheffey
Director, Office of Research

Attachment (Special Distribution
Under Separate Cover)

DISTRIBUTION: Headquarters
Region
Division

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

SUBJECT Bridge Deck Frosting Valley Environment	FHWA NOTICE

July 19, 1972

HRS-41

The attached report was developed by the State of California Highway Department. This report summarizes the results of the HPR study to investigate (1) the elimination of the need for chemical frost prevention on bridge decks by providing heat inside the enclosure under the deck and (2) improving frost warning systems for both motorists and maintenance personnel.

Summary of Results

This report concluded that: (1) Heating bridge decks by the above method is economically comparable with the overall cost of salting and repairing the attendant deck deterioration. (2) Motorist reaction to "Icy Bridge" warning signs is poor. (3) The ice detection systems tested cannot be relied upon to detect frost on bridge decks in the California valley area.

Application of Findings

In areas where deck frosting is a problem, serious consideration should be given to the possibility of heating the enclosures under bridge decks to improve the safety of the bridges and reduce maintenance costs.

Charles F. Scheffey
Director, Office of Research

Attachment (Special Distribution
Under Separate Cover)

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AUG 10 1972
OFFICE OF
STATE HIGHWAY ENGINEER

DISTRIBUTION: Headquarters
Region
Division

RECEIVED
AUG 8 - 1972
FOR FILING

7276

August 4, 1972

TO: G. L. Green, Acting Division Engineer
Federal Highway Administration

Federal-aid Project
No. I-405-8(17)303

FROM: George H. Baldwin
Administrator of Highways

by ORIGINAL SIGNED BY
R. D. ASBURRY
L. H. Young
Programing Engineer

SUBJECT: Request Change Order Approval

Contract 7276 Extra Work Order No. 6

Project Fremont Bridge

Highway Stadium Freeway

County Multnomah

The contract specifications did not require the top surfaces of the lower deck floor beams and stringers to be painted. Due to delays in erecting the steel, rust has formed on the unpainted surfaces and has run down onto the painted sides of the members.

This order covers the cost to sandblast and paint the top surfaces of the floor beams and stringers and all areas that have been stained by the rust.

Copies of the Engineer's letter of explanation are attached.

This work was tentatively recommended for approval by the Federal Highway Administration Assistant Area Engineer June 26, 1972.

Your approval as of June 26, 1972 is requested.

Attachments

LHY:jm

RECEIVED
AUG 9 - 1972
FOR FILING

Tom Edwards

OREGON STATE HIGHWAY DIVISION

7276

HIGHWAY BUILDING • SALEM, OREGON • 97310

August 4, 1972

TO Mr. Glen L. Green
Acting Division Engineer
Federal Highway Administration
477 Cottage St. N. E.
Salem, Oregon 97308

ORIGINAL SIGNED
L. L. WALLACE

FROM L. L. Wallace
Bridge Design Engineer

SUBJECT Upper Deck Heating System
Fremont Bridge
Stadium Freeway
Multnomah County
Contract No. 7276
F.A. Project No. I-405-8(17)303

Experience with the orthoropic deck on the small Battle Creek Bridge south of Salem and information received from the bridge maintenance personnel on the Port Mann Bridge indicates that a problem will be experienced with early frost formation on the orthotropic deck of the Fremont Bridge.

Attached are four copies of a preliminary study of a deck heating system that was prepared by Mr. Teeter of our staff. The system his investigation covered is an electric power heating system. Initial thinking would be to enclose the orthotropic deck section between the floor beams with a galvanized steel false ceiling. The heat source would be tubular electric heating elements suspended from the deck panels. Control of the heating system would be through a system of ice detector sensors. The preliminary estimate of cost for installation of this system, exclusive of yearly operating cost, is approximately $700,000. The $515,000 figure quoted in the attached report does not adequately cover the contingency of changes in our design assumptions.

There is a scarcity of information on deck heating systems and their design requirements. Calculations for heating requirements must, at best, be based on some broad approximations. With the lack of information on this subject, any type of deck heating system undertaken must be considered to involve some risk.

NOTED
TOM EDWARDS

RECEIVED
AUG 4 1972
OFFICE OF
STATE HIGHWAY ENGINEER

If any steps are to be taken towards providing a heating system on the structure prior to its completion, a decision must be made soon on this matter. We are, therefore, submitting this information to you with a request for approval to proceed with the design of the system and in negotiating its construction with the present contractor.

An early review of this submittal would be greatly appreciated.

DOC/ag (Attachs.)

cc Mr. George M. Baldwin
Mr. Tom Edwards
~~Mr. A. E. Johnson~~
Mr. Walter J. Hart
Mr. V. E. Skoog
Mr. L. H. Young

RECEIVED
AUG 7 - 1972
7276

August 3, 1972

Gordon C. Bjork, Ph.D.
President, Linfield College
McMinnville, Oregon 97128

Dear Doctor Bjork:

Below are the contract quantities of reinforcing steel for the Fremont Bridge and approaches. If you need more information, please contact us.

W. Fremont Approaches	14,457,000 lbs.
E. Fremont Approaches	2,712,700 lbs.
Fremont Bridge Substructure	1,950,000 lbs.
Fremont Bridge Superstructure	1,010,000 lbs.
Total	20,129,700 lbs.

Very truly yours,

George M. Baldwin
Administrator of Highways

By

F. B. Klaboe
Deputy State Highway Engineer

OMP:dh 1a

bc Tom Edwards
A. E. Johnson
Walt Hart

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FOR FILING

A E Johnson

OREGON STATE HIGHWAY DIVISION

7276

HIGHWAY BUILDING • SALEM, OREGON • 97310

August 3, 1972

Murphy Pacific Enterprises
4300 Eastshore Highway
Emeryville, California 94608

NOTED
A. E. JOHNSON

Gentlemen:

Fabrication Quality Control
Modified Panel Point 3
Fremont Bridge
Contract 7276

Several of the fabrication quality control requirements of the Specifications and Special Provisions for this project require specific information applicable to the individual components. The following is intended to supply this information in order to expedite the work. Most of this information has already been transmitted to American Bridge through our inspectors on the project.

Undercut On Fillet Welds

Section 410-3.22 (409) of our Standard Specifications requires that undercut shall not exceed 0.01 inch deep, when its direction is transverse to the primary stress in the part that is undercut. On the modified Panel Point 3 section the areas to be limited to 0.01 inch maximum undercut will be the web toe of the fillets attaching the vertical stiffeners to the girder webs, and both toes of the fillets attaching the forked bottom flanges of the girders, the top flanges of the arch ribs, the welded diaphragms, and the girder flange extensions outside the webs to the webs. These areas are indicated in red on the attached drawing.

Maximum Fillet Weld Size

Article 410-3.22 (401)- General, of the Special Provisions indicates that fillet weld sizes shall not be substantially in excess of the design requirements without the approval of the engineer. For the Panel Point 3 section, substantially in excess shall be considered anything greater than 1/16 inch oversize. Enlarging of fillet welds to compensate for gaps between faying surfaces as defined in Article 410-3.22 (403) - Assembly, of the Special Provisions will be considered as part of the design requirements.

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AUG 4 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

Testing In Vicinity Of Tension Butt Welds

The Plans, Sheet 16, Item 4, of the Structural Steel Notes states "The contractor shall verify by means of certified tests that the plates in the vicinity of tension butt welds, and where indicated on plans, are free from laminations, contaminations, or any other defects which will be detrimental to transfer of tensile stress". The plans for the modified detail at Panel Point 3 states "Weld quality for all girder web butt welds shall be as required for butt welds in tension flanges". The only good "certified" test available for detecting laminations or other contaminations in rolled plate is ultrasonic. For this project the area in the vicinity of the butt welds should be tested using acceptance standard ASTM A 578-71b, Level I. If any recordable defects are found in the vicinity of the butt weld, an area six inches beyond the outer limits of the recordable defect shall be tested. For this project the definition of vicinity is an area extending from the edge of the plate to six inches from the edge. Defects in excess of ASTM A 578-71b in any of the tested areas may be cause for rejection of the plate. Visible edge defects shall be treated in accordance with the approved plate defect repair procedures previously approved.

In addition to the above items, it has been brought to our attention that one of the forked 3 1/4" bottom flange plates has an area of excessively rough surface. The finish on this surface falls outside the intent of the "workmanlike finish" in ASTM A 6, Section 3. We consider the rough surface to be noninjurious provided the defects are confined to the surface and the plate is sound below the surface. The soundness of this plate should be tested by checking an area at least six inches square in the roughest portion of the plate. This area should be ground smooth and magnetic particle inspected. The plate may be subject to rejection, if any signs of cracking or discontinuity extend below the plate surface.

Very truly yours,

George M. Baldwin
Administrator of Highways
By ORIGINAL SIGNED
R.W. ELLISON
Walter J. Hart
Bridge Engineer

WJH/ag (Attacn.)
cc W. J. Lowe, American Bridge(Att.)
Eric Nordlin, St. of Calif.(Att.)
Larry Lowe, St. of Calif.(Att.)
R. O. Cunningham (Attach.)
Ed Rief (Attach.)
John Jenkins (Attach.)
H. S. Coulter (Attach.)
Murphy Pacific, Portland (Attach.)
H. A. Schell (Attach.)
A. E. Johnson
Tom Edwards

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JUL 31 1972
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OREGON STATE HIGHWAY DIVISION

7276

HIGHWAY BUILDING • SALEM, OREGON • 97310

July 28, 1972

AIR MAIL

Mr. W. J. Lowe
American Bridge Division
U. S. Steel Corporation
P. O. Box 2015
Terminal Annex
Los Angeles, California 90054

Dear Mr. Lowe:

NOTED
A. E. JOHNSON

Weld Repair Procedures for Plate Defects
Revised Panel Point 3
Fremont Bridge, Contract 7276

I have your transmittal of July 17, 1972, of the proposed weld repair procedure for plate defects. We cannot give blanket approval to repair of all defects listed in the proposed procedure. We will approve the basic concept of the plate repair procedures subject to the revisions and conditions noted below.

Item I. OXYGEN CUT BURNING NICKS OR GOUGES LESS THAN 3/8" DEEP - This procedure is acceptable subject to using electrodes not exceeding 5/32" diameter.

Item II. PLATE SURFACE DEFECTS - Repairs under this category should be governed by ASTM A6 (1971) Section 8 Quality, and not by 8.2.2.1 and 8.2.2.2 only.

Please note that this limits the reduction in thickness to removal of defects to not more than 30% of the nominal thickness as well as the extent of the area that can be repaired Repair welding shall be done in accordance with A6, Section 9, except that E7018 electrodes not greater than 5/32" diameter shall be used and preheat shall be in accordance with the Oregon State Highway Department specifications.

Paragraph IId of Item II is a special case not covered by ASTM A6. Defects of the magnitude discussed in IId, in other words over 30% of the nominal plate thickness but not exceeding 50% of the nominal plate thickness, may be repaired with the approval of the Engineer subject to review for each individual case. Repairs would be as outlined in IId with the addition of the following requirements:

1. The gouged area shall be inspected with magnetic particle or dye penetrant prior to welding to be certain that all traces of the defect have been removed.

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JUL 28 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

2. Electrodes shall not exceed 5/32" diameter.

3. The repaired area shall be both radiographically and ultrasonically inspected. Ultrasonic inspection shall be done in accordance with the latest Oregon State Highway Department specifications.

4. The repaired surface shall be smooth and free of any projections or depressions.

5. The plate, after repair, shall be flat within the requirements of ASTM A6.

Item III. EDGE DEFECTS PARALLEL TO PLATE SURFACE - Paragraph IIIa should read 8.3.1 not 7.3.1.

The following requirements should be added to paragraph IIIb1:

Gouged areas shall be checked with dye penetrant or magnetic particle to be sure defects have been removed.

Welding shall be done with E7018 electrodes not greater than 5/32" in diameter.

Preheat shall be as required by the specifications.

Paragraph IIIb2. This paragraph should include provisions that when edge discontinuities exceed 1" in depth repairs will be permitted only with the approval of the Engineer after review of each individual case. The extent of discontinuity of this magnitude should be determined ultrasonically. Use the definition of recordable defects as defined by ASTM A578-71B. In addition, all indications greater than 50% of the back reflection shall be recorded regardless of changes in height of the back reflection. A sketch showing the extent of the discontinuity shall be submitted to the Engineer in order that he may evaluate the effect of the discontinuity. Those discontinuities determined by the Engineer to be repairable may be repaired in accordance with IIIb2 of these proposed procedures with the addition that the repair be ultrasonically checked and that E7018 electrodes not exceeding 5/32" diameter be used and that the preheat required by the specifications is followed.

A copy of your proposed weld repair procedures for plate defects with the above-described modifications is attached.

We have received an informal inquiry on possible repair procedures to a series of cold tears at one end of one of the 2 3/4" bottom flange plates. We question whether an acceptable repair of the cold tears in this plate is feasible using a gouge-out and welding-up technique. It would appear to be difficult to

obtain a surface profile that would give proper bearing for a bolted splice in plates as thick as those under consideration. For that reason we do not believe that acceptable repairs to the cold tears can be made.

Very truly yours,

George M. Baldwin
Administrator of Highways
By

ORIGINAL SIGNED
WALTER J. HART

Walter J. Hart
Bridge Engineer

WJH:dh
Attachment

cc Tom Edwards /w/ attach.
A. E. Johnson /w/ attach.
H. S. Coulter /w/ attach.
John Jenkins /w/ attach.
Ed Rief /w/ attach.
R. O. Cunningham /w/ attach.
H. A. Schell, FHWA, /w/ attach.
Larry Lowe, St. of Calif., /w/ attach.
Eric Nordlin, St. of Calif., /w/ attach.
Murphy Pacific, Portland, /w/ attach.

WELD REPAIR PROCEDURES FOR PLATE DEFECTS

Fremont Bridge - Panel Points Modification
American Bridge Order K-3513-X1

I. OXYGEN CUT BURNING NICKS OR GOUGES LESS THAN 3/8 DEEP

a) By arc-air gouging or grinding, prepare the area for welding.

b) Preheat to Oregon Spec. requirement for grade and thickness of steel.

c) Using E7018 electrode, deposit one or more weld layers to fill with a slight reinforcement. *(Electrode diameter shall not exceed 5/32".)*

d) Finish by flush grinding or machining to blend with the adjacent edge condition.

e) Dye penetrant inspect for cracks, fusion defects or excessive porosity.

II. PLATE SURFACE DEFECTS

a) Repair per ASTM A6, ~~par. 8.2.2.1 and 8.2.2.2~~ *(Sections 8 and 9)* (1971) using grinding or arc-air gouging to remove the defect to sound metal. Dye penetrant inspect prepared surface to ascertain freedom from defects prior to welding. Use E7018 electrodes. *(Maximum diameter of 5/32".)*

b) Preheat to Oregon State Spec. requirement for grade and thickness of steel.

c) On those defects whose depth does not exceed 20% *(30%)* of the plate thickness, dye penetrant inspect the ~~repaired~~ *(gouged)* area for cracks, fusion defects or excessive porosity *(before welding. Ultrasonic the repair after welding.)*

(See transmittal letter for other requirements.)

d) On those defects whose depth exceed 20% *(30%)* of the plate thickness, in addition to step (c), ultrasonic *(and radiographic)* inspect the repaired area for cracks and/or fusion defects. This procedure is limited to defects not exceeding 50% of the plate thickness.

III. EDGE DEFECTS PARALLEL TO PLATE SURFACE

a) Discontinuities are to be rated per ASTM A20 *(-71)* par. ~~7.3.1~~ *(8.3.1)* with up to 1/8 inch depth and unlimited length acceptable on the cut edge.

b.1) Discontinuities exceeding 1/8 inch and up to 1" depth, repair by gouging from the edge to remove the defect. Inspect the repair with ultrasonic. *(Inspect the gouge with dye or magnetic particle. Use OSHD preheat E7018 electrode.)*

b.2) When the discontinuity is over 1" in depth, the repair will be limited by gouging to 1" deep and weld buildup. Inspect the repair with radiograph *(and ultrasonic using latest OSHD Specifications. (See transmittal letter requirements.))*

c) Prior to welding, preheat as required for plate grade and nominal thickness. Use E7018 electrodes *(maximum 5/32" diameter)*.

Report all defects to be repaired to the customer's inspector and in addition transmit through Engineering a drawing record sketch for defects under classification II-d and III-b.1 and III-b.2.

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AUG 2-1972

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7276

5

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

DATE July 27, 1972

TO Mr. A. E. Johnson
Assistant State Highway Engineer

FROM Walter J. Hart
Bridge Engineer Walter J. Hart

SUBJECT Upper Deck Heating System
Fremont Bridge, Contract 7276

cy - Fields Hart 8-1-72

Experience with the orthotropic deck on the small Battle Creek Bridge south of Salem and information received from the bridge maintenance personnel on the Port Mann Bridge indicates that a problem will be experienced with early frost formation on the orthotropic deck of the Fremont Bridge.

A preliminary study of a deck heating system has been prepared by Mr. Teeter of our staff. The system he has investigated is an electric power heating system. Initial thinking would be to enclose the orthotropic deck section between the floor beams with a galvanized steel false ceiling. The heat source would be tubular electric heating elements suspended from the deck panels. Control of the heating system would be through a system of ice detector sensors. The preliminary estimate of cost for installation of this system, exclusive of yearly operating cost, is $500,000.

There is a scarcity of information on deck heating systems and their design requirements. Calculations for heating requirements must, at best, be based on some broad approximations. With the lack of information on this subject, any type of deck heating system undertaken must be considered to involve some risk.

If any steps are to be taken towards providing a heating system on the structure prior to its completion, a decision must be made soon on this matter.

WJH:dh

Asst. State Hwy. Engr.

Mr Edwards instructed to proceed post heat. with plans & contract with Flds.

RECEIVED
JUL 28 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

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JUL 26 1972
FOR FILING

7276

OREGON STATE HIGHWAY DIVISION

HIGHWAY BUILDING • SALEM, OREGON • 97310

G. L. Green, Acting Division Engineer
XXXXXXXXXXXXXXXXXXXXX

DATE July 25, 1972

TO R. E. Simpson, Division Engineer
Federal Highway Administration
Post Office Box 300
Salem, Oregon 97308

Federal-aid Project
No. I-405-8(17)303

FROM George M. Baldwin
Administrator of Highways
by ORIGINAL SIGNED BY
R. D. ASBURRY

SUBJECT Request Change Order Approval

Contract 7276 Extra Work Order No. 5 and State Force Order No. 6

Project Fremont Bridge

Highway Banfield Freeway

County Multnomah

Metallurgical Engineering, Inc. has been retained to perform a residual stress analysis of panel points 3 and 43 tie girder sections.

Extra Work Order number 5 compensates the contractor for all costs incurred while handling the tie girder sections for inspection by Metallurgical Engineering, Inc.

State Forces will transport the tie girders to the storage building and will dismantle them as requested by Metallurgical Engineering, Inc. State Force Order number 6 covers the equipment rental and labor costs necessary to transport, and dismantle the tie girder sections and the rental costs of the building to be used to store the girder sections.

Copies of the Engineer's letter of explanation are attached.

The estimated cost of State Force Order number 6 is $22,440.00 with Federal participation of $20,196.00.

This work was tentatively recommended for approval by the Federal Highway

7316

Administrative Assistant or Area Engineer July 3, 1973.

Your approval of Extra Work Order number 9 and State Force Order number 6 as of July 3, 1973 is requested.

Attachments

Federal-aid Project
No. I-405-4(17)303

EMW:bds

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JUL 27 1972
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OREGON STATE HIGHWAY DIVISION

HIGHWAY BUILDING • SALEM, OREGON • 97310

July 21, 1972

7276

Murphy Pacific Enterprises
5051 North Channel Avenue
Portland, Oregon 97217

Attention Mr. Alpo J. Tokola
Project Manager, Fremont Bridge

Gentlemen:

Fremont Bridge, Contract 7276

Enclosed are 15 prints of drawing 28278 (Revised 7-20-72), the new details for Panel Point 3. The size of the fillet weld joining the tie girder bottom flange and the arch rib top flange to the 2 3/4 inch web plate have been revised. The surface finish on the 4-foot radius section of the girder web has been revised from a surface roughness of 500 as called for in the standard specifications to a maximum surface roughness of 125. This grinding should be accomplished in the circumferential direction. The note has been added indicating fillet weld returns at two locations.

Our consultants, Parsons, Brinckerhoff, Quade & Douglas, have notified us that they have not received an assembly welding procedure drawing for the new Panel Point 3. Due to the complexity of this section an assembly procedure drawing is considered essential. Please advise American Bridge to take care of this matter.

Very truly yours,

George M. Baldwin
Administrator of Highways
By

WALTER J. HART

Walter J. Hart
Bridge Engineer

NOTED
A. E. JOHNSON

WJH:dh
Enclosures
cc Murphy Pacific, Emeryville /w/ 1 encl.
Robert Crabtree, HNTB
L. G. Silano, PBQD
American Bridge /w/ 3 encl.
Tom Edwards /w/ 1 encl.
A. E. Johnson /w/ 1 encl.
H. S. Coulter /w/ 1 encl.
Ed Rief /w/ 1 encl.
H. A. Schell /w/ 1 encl.
R. O. Cunningham /w/ 1 encl.

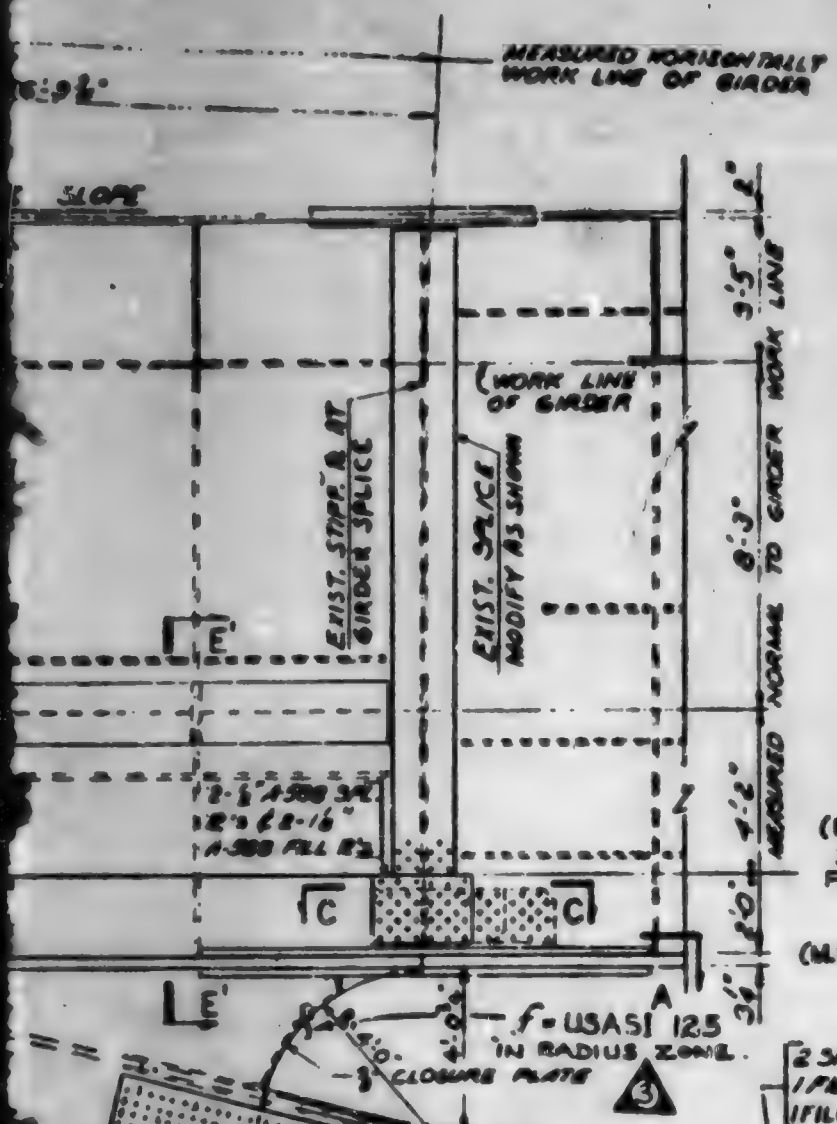
RECEIVED
JUL 21 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

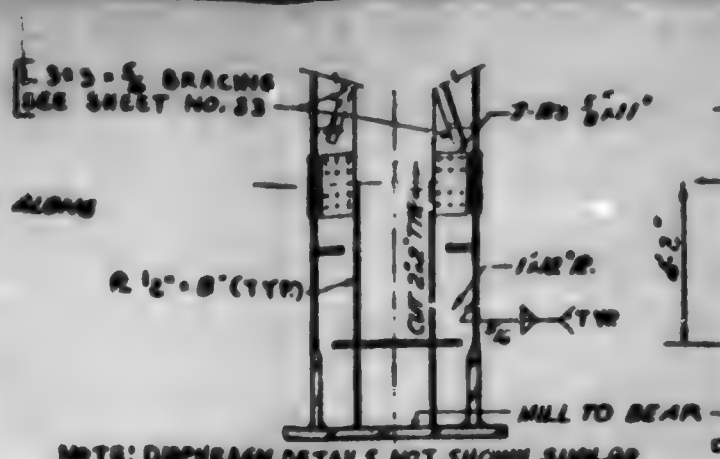
NOTE
THE SCALE OF THIS PRINT IS ½ THAT OF THE ORIGINAL DRWG.
FOR EXAMPLE:
INDICATED SCALE 1"=1'-0"
SHOULD BE READ ½"=1'-0".
INDICATED SCALE 1"=10'-0"
SHOULD BE READ 1"=20'-0"

44°10"
22°0½"
16°9½"
TOP FLANGE @ 2°-6" (EXIST.)
5% SLOPE
WEB @ 5/16 x 140" (EXIST.)
G3
EXIST. SPLICE MODIFY AS SHOWN
EXIST. STIFF. @ AT GIRDER SPLICE
E SPLICE @ 2 - 1¾" x SEE SHT. NO. 34
2-¾" A588 SPL. @ 2-¾" A-588 FILL @'s.
WALK MAT. FOR DETAILS SEE SECTION A-A
WEB @'s 1½ C.O. A-588
BOT. FLANGE 2¾ x 66" A-588
WEB @'s 2¾ A-588
NEW SPLICE @'s REQ'D. SIMILAR TO EXIST. SPLICE. PROVIDE ¾" A-588 FILL AND REVISE BOLT LAYOUT TO CLEAR WELD.
SPLICE PLATES
FILL PLATES
SECT. C
SECT. C
A3
SECTION C-C
SECTION C'-C' SIMILAR
1½" = 1'-0"
E SPLICE
L 3½ x 3½ x ⅜ (TOP & BOT. OF ⅜" @)
½" Ø THREADED STUD 6" c/c
⅜" PLATE
8'-11⅛" (HORIZONTAL)
15'-8¼" @ RELOCATED ARCH SPLICE
DETAIL AT PANEL POINT 3
⅜" = 1'-0"
½" FILLET WELD
⅝ FILLET WELD
CS ARCH
RETURN WELD 1" (2)
(M.P. 100%)
5/8
FOR A LENGTH OF 5 FT. FROM E SPLICE (M.P. 100%) (1)
OUTLINE OF WALKWAY ⅜" FLOOR PLATE - CLIP TO STIFFENER FLANGES (SEES DETAIL 'J')
STIFFENER
SECTION B-B
⅜" = 1'-0"
R=12'-0"
EXIST. L 6 x 4 x ½
FOR LADDER DETAILS SEE SHOP DWG. NO. K2613-H&CD
L ¾ x 5" STIFF. @
SYMMETRICAL ABOUT ℄ GIRDER
R=7½"
(M.P. 100%) Typ (1)
FLANGE
MANHOLE COVER IN UNSATISFACTORY - REUSE EXIST. @ COVER AT NECK MANHOLE
FOR A LENGTH OF 5 FT. FROM E SPLICE (M.P. 100%) (1)
SECTION A-A
SECTION D-D

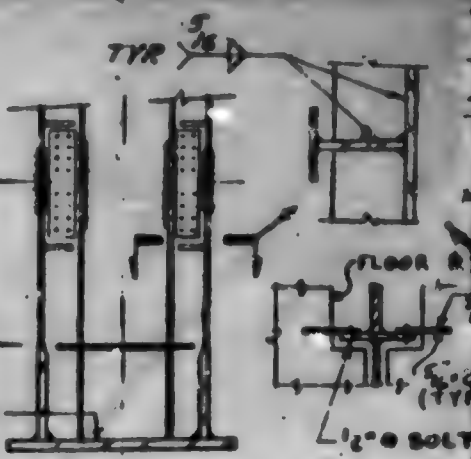
DRWN BY R.L.M. CHKED BY J.L.M. IN CHARGE OF J.L.M.

REVISED 7-30-1972 | (1) WELD SIZE REVISED | (2) RETURN WELD NOTE ADDED | (3) SURFACE FINISH NOTE ADDED



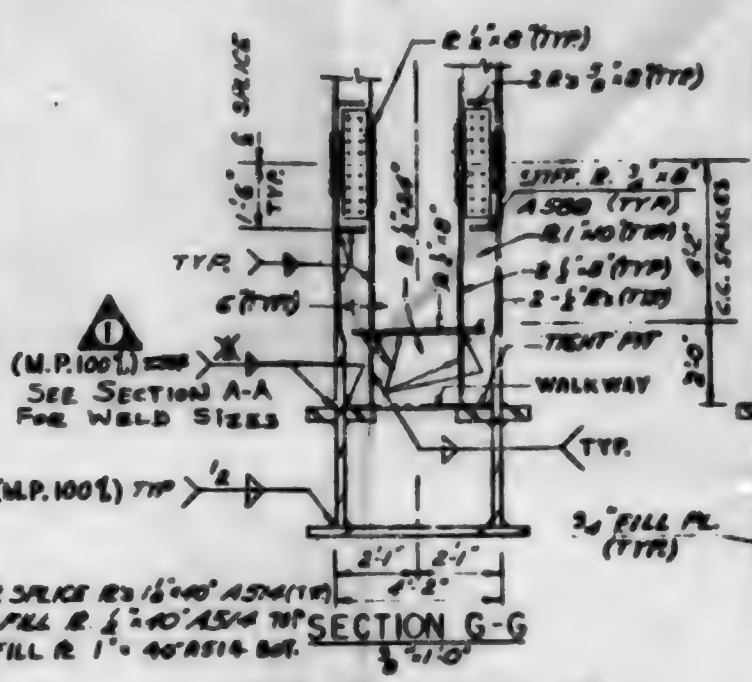


SECTION E-E
SECTION E'-E' SIMILAR
3/8"=1'-0"



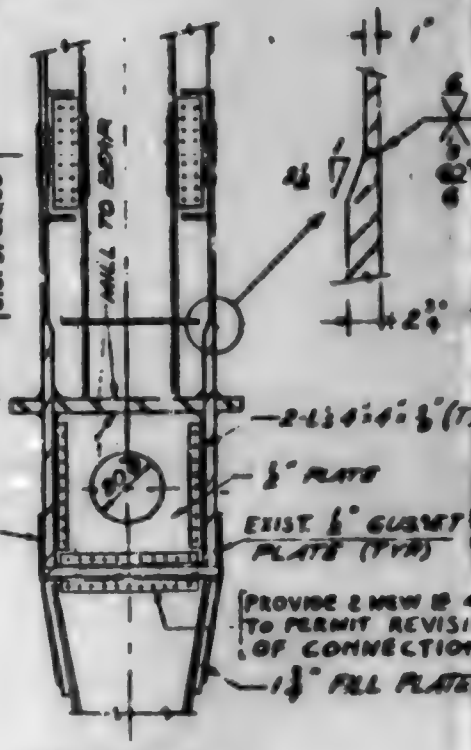
SECTION F-F
3/8"=1'-0"

DETAIL 1
1"=1'-0"

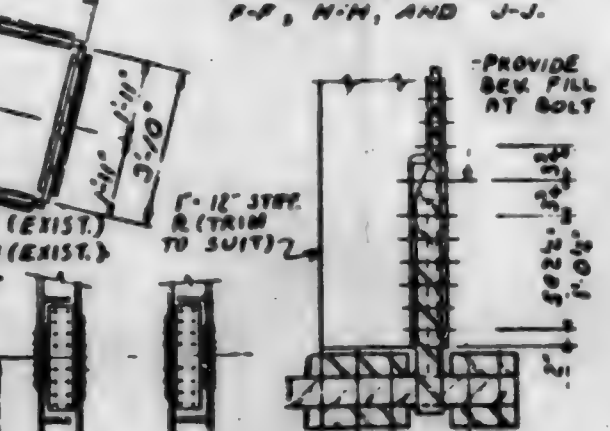


SECTION G-G
3/8"=1'-0"

NOTE: DETAILS SHOWN ARE SIMILAR FOR SECTIONS F-F, H-H, AND J-J.



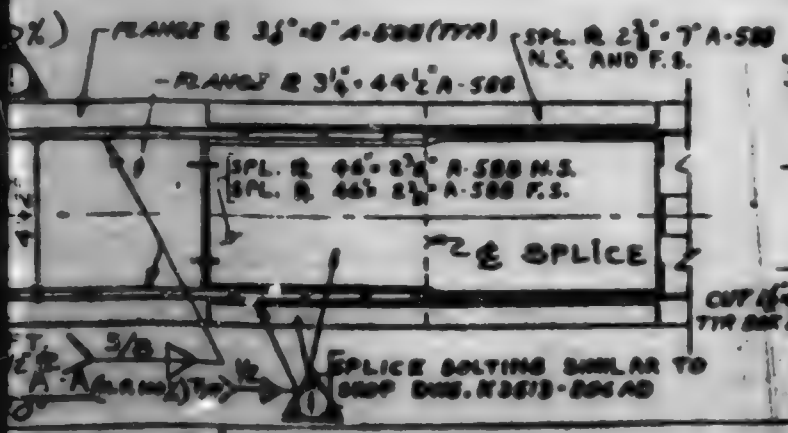
SECTION H-H
3/8"=1'-0"

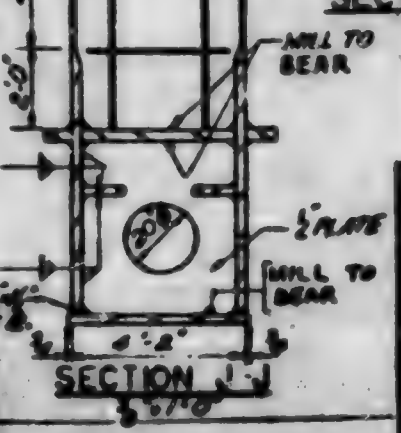


SECTION K-K
1"=1'-0"

NOTES:

1. FOR GENERAL NOTES SEE SHEET 3.
2. FOR DETAILS NOT SHOWN SEE SHEET 15
3. ALL STEEL ASTM-A36 UNLESS NOTED.
4. ALL FIELD CONNECTIONS SHOWN ON T SHEET ARE TO BE 1"Ø A-325 UNLESS
5. ALL FILLET WELDS 5/16" UNLESS NOTED
6. FOR STRUCTURAL STEEL NOTES SEE 3.
7. FOR GIRDER FRAMING SEE SHEETS
8. RADIOGRAPHIC INSPECTION IS REQUIR FOR 100% OF THE INDICATED G WEB LONGITUDINAL BUTT WELD.
9. WELD QUALITY FOR ALL GIRDER WEB WELDS SHALL BE AS REQUIRED FO WELDS IN TENSION FLANGES.
10. (M.P.100%) DENOTES 100% MAGNETIC PA INSPECTION. BALANCE OF FILLET WEL HAVE AT LEAST 10% MAGNETIC PARTIC INSPECTION.
11. PROVIDE LOCK NUTS & WASHERS FOR 1/2" & THREADED STUDS.


FLANGE PL 3 1/2"x8" A-588(TYP)
FLANGE PL 3 1/4"x44 1/2" A-588
SPL. PL 46"x2 3/4" A-588 M.S.
SPL. PL 46"x2 1/4" A-588 F.S.
SPLICE
SPLICE BOLTING SIMILAR TO SHOP DWG. K3613-B0640



SECTION J-J
3/8"=1'-0"

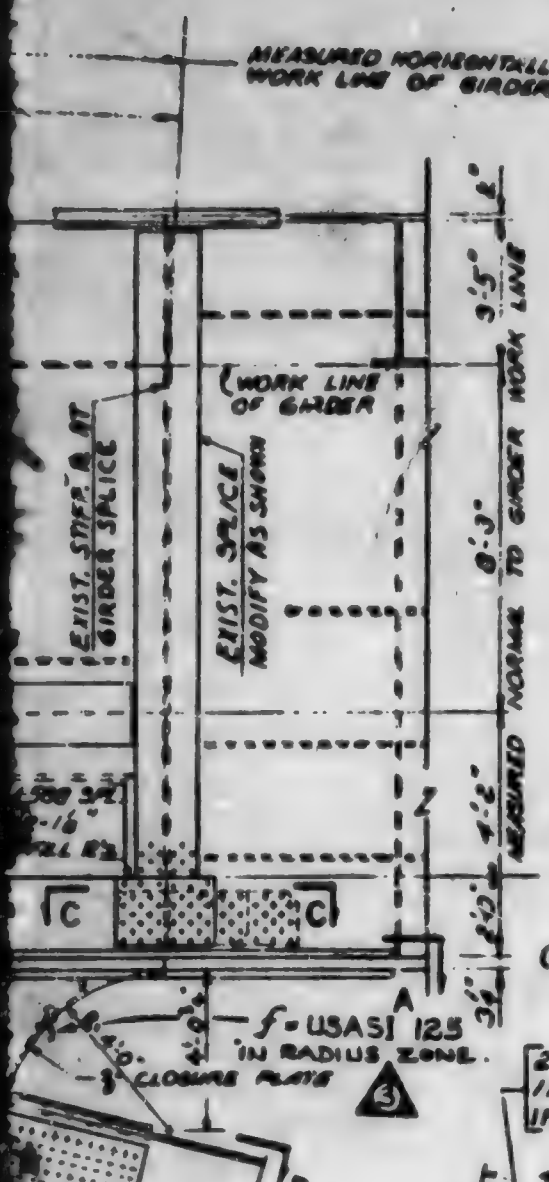
OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

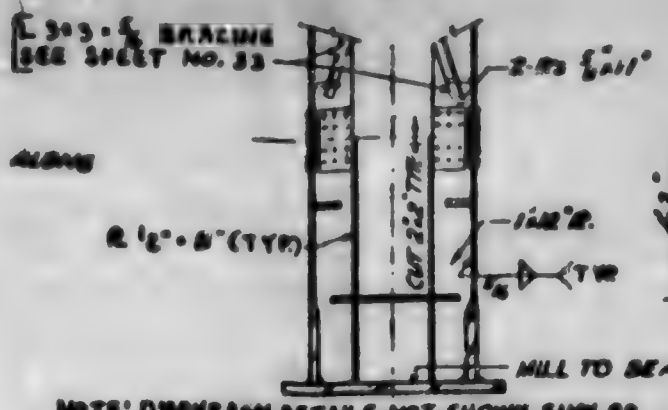
FREMONT BRIDGE
STADIUM FREEWAY
MULTNOMAH COUNTY

DETAILS OF PANEL POINT

DATE: JUNE 1, 1972 SCALE: AS SHOWN
DESIGNED BY: PWA DRAWN BY: PWA CHECKED BY:
SHEET NO. 28

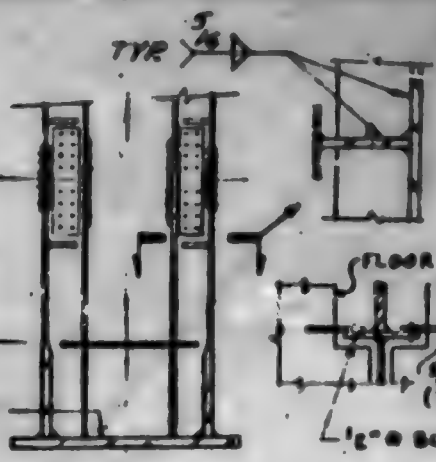
NOTE ADDED





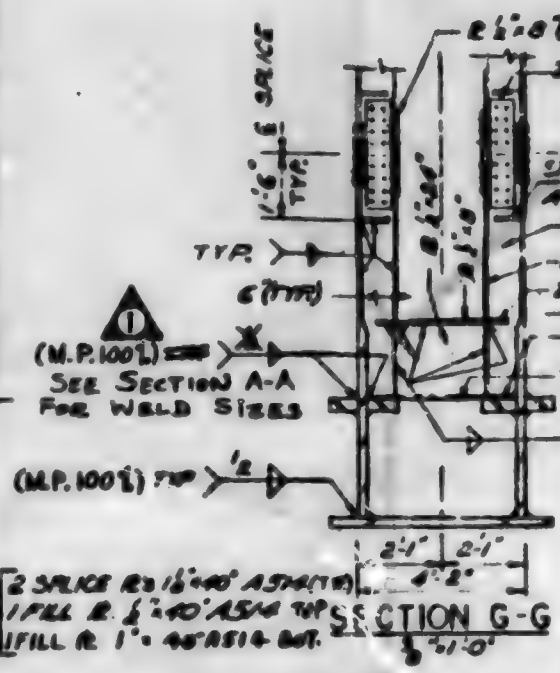
NOTE: DIAPHRAGM DETAILS NOT SHOWN SIMILAR TO SECTION G-G.

SECTION E-E
SECTION F-F SIMILAR
3/8"=1'-0"



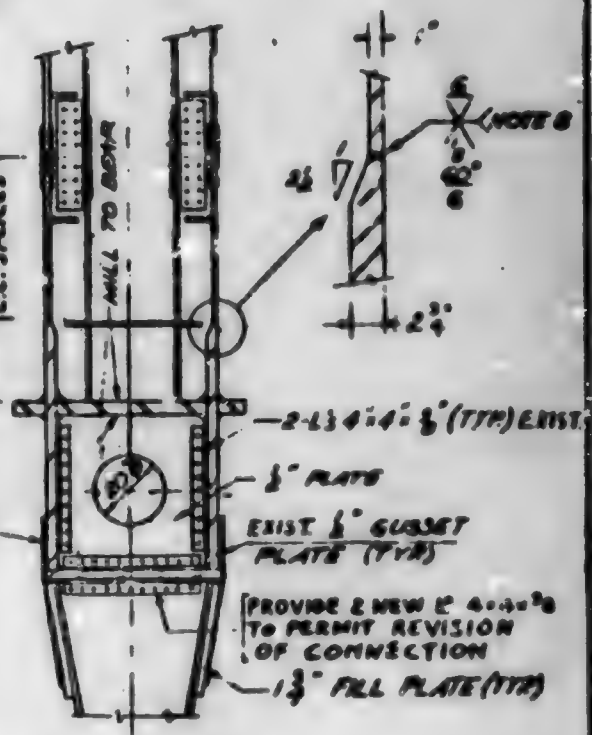
SECTION F-F
3/8"=1'-0"

DETAIL 1
1"=1'-0"

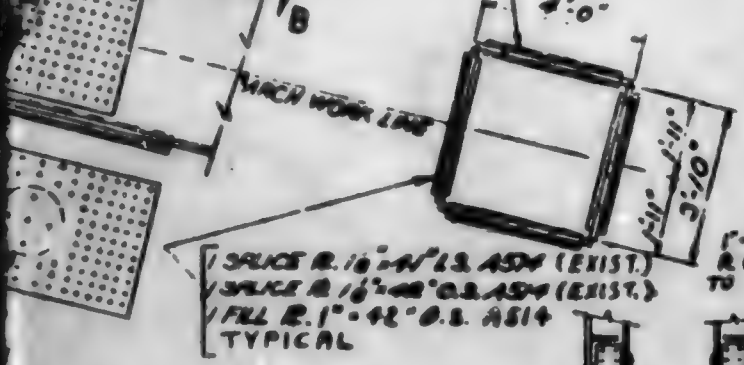


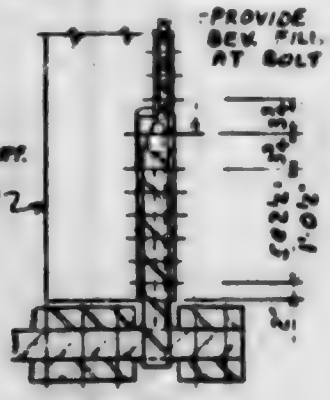
SECTION G-G
3/8"=1'-0"

NOTE: DETAILS SHOWN ARE SIMILAR FOR SECTIONS F-F, H-H, AND J-J.

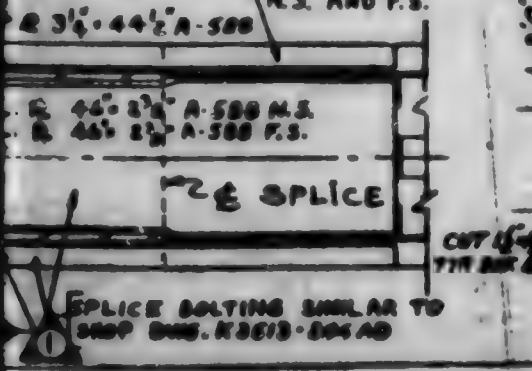

MILL TO BEAR
NOTE 8
45°
2½"
2-L 3 4"x 4"x 5/8" (TYP) EXIST.
5/8" PLATE
EXIST 5/8" GUSSET PLATE (TYP)
PROVIDE 2 NEW PL 4"x 4"x 5/8 TO PERMIT REVISION OF CONNECTION
1 3/4" FILL PLATE (TYP)

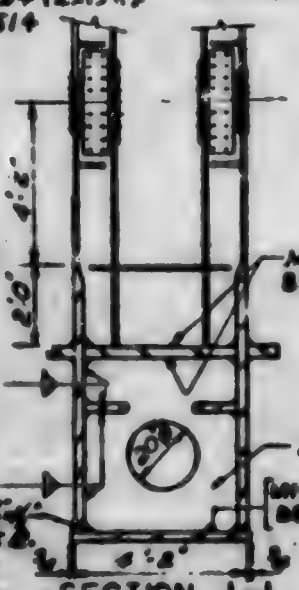
SECTION H-H
3/8"=1'-0"





SECTION K K
1"=1'-0"


7/8"Ø A-325 (TYP)
SPL PL 2 3/8"x 7" A-588 N.S. AND F.S.
PL 3½"x 44½" A-588
PL 44"x 2 3/8" A-588 M.S.
PL 44½" 2 3/8" A-588 F.S.
2" SPLICE
SPLICE BOLTING SIMILAR TO SHOP DWG. K 3613-B06 A0



SECTION J-J
3/8"=1'-0"

NOTES:

1. FOR GENERAL NOTES SEE SHEET 3.
2. FOR DETAILS NOT SHOWN SEE SHEET 15.
3. ALL STEEL ASTM A36 UNLESS NOTED.
4. ALL FIELD CONNECTIONS SHOWN ON THIS SHEET ARE TO BE 1" Ø A-325 UNLESS NOTED.
5. ALL FILLET WELDS 5/16" UNLESS NOTED.
6. FOR STRUCTURAL STEEL NOTES SEE SHEET 16.
7. FOR GIRDER FRAMING SEE SHEETS 31 & 32.
8. RADIOGRAPHIC INSPECTION IS REQUIRED FOR 100% OF THE INDICATED GIRDER WEB LONGITUDINAL BUTT WELD.
9. WELD QUALITY FOR ALL GIRDER WEB BUTT WELDS SHALL BE AS REQUIRED FOR BUTT WELDS IN TENSION FLANGES.
10. (M.P. 100%) DENOTES 100% MAGNETIC PARTICLE INSPECTION. BALANCE OF FILLET WELDS TO HAVE AT LEAST 10% MAGNETIC PARTICLE INSPECTION.
11. PROVIDE LOCK NUTS & WASHERS FOR ½" Ø BOLTS & THREADED STUDS.

OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

FREMONT BRIDGE
STADIUM FREEWAY
MULTNOMAH COUNTY

DETAILS OF PANEL POINT 3

28278

DEPT'D
JUL 27 1972
FOR FILING

OREGON STATE HIGHWAY DEPARTMENT

7276

July 20, 1972

NOTED
A. E. JOHNSON

Mr. Larry Lowe
Materials & Research Department
California Division of Highways
2735 San Pablo Avenue
Berkeley, California 94702

Re: Repair Work
Fremont Bridge
Contract #7276

Dear Mr. Lowe:

I have been asked to notify you of our authorization for you to communicate directly with the Bridge Section for submission of reports and requests for information.

In the interest of expediting the flow of information, will you please submit requests and reports to Mr. W. J. Hart, Bridge Engineer. Mr. Hart will see that items are properly distributed here. The answers to most questions will have to be obtained from our welding specialist, who is in the Bridge Section, or from the consultant, who is in frequent contact with the Bridge Section, so more time will be saved by contacting the Bridge Section direct.

Please send the bill direct to the Materials and Research Section, however.

Very truly yours,

GEORGE M. BALDWIN
Administrator of Highways

By

JOHN C. JENKINS
Engineer of Materials & Research

JCJ:sb

cc: Tom Edwards
A. E. Johnson
W. J. Hart
H. S. Coulter
R. O. Cunningham
E. J. Risf
J. L. Beaton (Materials & Research Engineer)

RECEIVED
JUL 21 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

RECEIVED
JUL 19 72

FORM 734-1 (REV. 1-68)

7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
July 19, 1972

SUBJECT: Repair Work
Fremont Bridge
Contract #7276

To: Mr. A. E. Johnson
Asst. State Highway Engineer
O F F I C E

Ed Rief has been informed that the California Highway Division would like his presence at American Bridge about two days after a shipment of steel arrives. We learned on July 18 that the material is now here, about two weeks early. Ed plans to leave on July 20 with possible return July 22.

The cost of the trip, to be charged to 626-1013-900, is estimated as follows (cost of meals is based on experience from the last trip and exceeds the normal allowance; Breakfast $1.65, Lunch $2.60, Dinner $5.00):

Air Fare	$ 96.00
Meals	21.10
Lodging @ $20.00	40.00
Ground Transportation & Misc.	15.00
Total	$172.10

- cc 2cp with Estp. Out of State

We request authorization to make this trip.

Approval Recommended
Asst. State Hwy. Engr.

JOHN C. JENKINS
Engineer of Materials & Research

JCJ:eb

cc: Tom Edwards
Walt Hart
K. S. Coulter
R. O. Cunningham
E. J. Rief

APPROVED
DEPUTY STATE HIGHWAY ENGINEER
Date 7/19/72

cy accounting
Hazel Hawk
John Jenkins
Ed Rief
7-19-72
cy-mailed

SP 82478-784

RECEIVED
AUG 10 1972
FOR FILING
7276

5V

6-27-72

July 12, 1972

Metallurgical Engineers, Inc.
2346 S. W. Canyon Road
Portland, Oregon 97221

Attention: Harry Ostrowski
President

MISC. CONTRACTS and
AGREEMENTS No. 7399

Gentlemen:

Attached for your records is one fully executed copy each of two supplemental agreements for technical services in the investigation of the crack in the main girder of the west span of the Fremont Bridge.

We have retained a fully executed copy of this agreement for the Commission's files.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

Ar
Attachment

cc Walt Hart
(Conf. copy of each agree. att.)

RECEIVED
JUL 12 1972
FOR FILING

OREGON STATE
HIGHWAY DEPARTMENT

7276

July 11, 1972

Mr. Larry Lowe
Materials & Research Department
California Division of Highways
2735 San Pablo Avenue
Berkeley, California 94702

NOTED
A. E. JOHNSON

Re: Repair Work
Fremont Bridge
Contract #7276

Dear Mr. Lowe:

As Mr. Rief has surely told you, subsequent to my letter of June 30, 1972 concerning the lack of previous "Keyhole" welding procedure tests on ASTM A588 and A514 at American Bridge, the consultant, PBQ & D, has furnished evidence that the Keyhole tests were satisfactorily performed. It will therefore not be necessary that the welding procedures again be tested.

Very truly yours,

GEORGE M. BALDWIN
Administrator of Highways

By

JOHN C. JENKINS
Engineer of Materials & Research

JCJ:eb

cc: Tom Edwards
A. E. Johnson
W. J. Hart
H. S. Coulter
R. O. Cunningham
E. J. Rief

RECEIVED
JUL 12 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

RECEIVED
JUL-10 1972
FOR FILING

7276

July 7, 1972

To Mr. Glen L. Green
Acting Division Engineer
Federal Highway Administration
Salem, OR 97308

From Tom Edwards
State Highway Engineer

Subject Fremont Bridge Superstructure
FAI-405-8(17)303, Stadium Freeway
Price Agreement No. 14, Contract No. 7276

During erection of the west back span of the subject structure, the left tie girder fractured at Panel Point 3. The failure occurred through a machined junction piece in the bottom flange of the girder at its connection with the arch rib. This was the third incident involving one of these machined pieces.

As a result of this fracture, the junction between the arch and tie girder was completely redesigned and the project suffered considerable delay. Studies by various consulting firms to date indicate that the fracture was the result of design and metallurgical stress raisers with little responsibility resting with the contractor.

A price agreement in the amount of $5,305,075 has been written to compensate the contractor for costs incurred due to the revision of Panel Points 3 and the delays associated therewith. The agreement also increases the contract time from 860 calendar days to 1,453 calendar days. This extends the contract time to the presently anticipated completion date of July 15, 1973. This covers all delays to date including those caused by the girder fracture, problems associated with casting of the bearing assemblies, and others.

The agreement includes a disclaimer for extra costs relative to casting of the bearing assemblies.

(More)

Responsibility associated with the fracture of the girder is not fixed by the agreement. The terms of the contract remain in effect in this matter.

Attached is a history of the problem with the machined junction pieces, a matrix of responsibility, justification of the money amount of the price agreement, and a discussion of the time extension.

Your approval of Price Agreement No. 14 is requested.

Attachments
(Br. has cy & att.)

cc: F. B. Klaboe
A. E. Johnson
W. J. Hart
L. I. Lindas
H. S. Coulter
V. E. Skoog

RWE:dh ms

RECEIVED
JUL 10 1972
FOR FILING

OREGON STATE
HIGHWAY DEPARTMENT

7276

June 30, 1972

Mr. Larry Lowe
Materials & Research Dept.
California Division of Highways
2735 San Pablo Avenue
Berkeley California 94702

Re: Repair Work
Fremont Bridge
Contract #7276

Dear Mr. Lowe:

There has been some question about the need to perform the "Keyhole" T-bend test for weld procedure qualification on the subject project. We have been unable to find evidence that American Bridge successfully passed this test during the original fabrication on the structure. Mr. Walter J. Hart, Bridge Engineer, has therefore decided that the requirements of the specifications with respect to this test must be fully complied with.

Will you, therefore see that the test coupons are prepared for the required A514 and A588 welds. We would like your laboratory to perform the testing.

Very truly yours,

GEORGE M. BALDWIN
Administrator of Highways

By

JOHN C. JENKINS
Engineer of Materials & Research

JCJ:eb

cc: Tom Edwards
A. E. Johnson
W. J. Hart
H. S. Coulter
R. D. Cunningham
E. J. Risf

NOTED
TOM EDWARDS

RECEIVED
JUL 3 1972
OFFICE OF
STATE HIGHWAY ENGINEER

JUN 11 1972

Tom Edwards

7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

DATE June 29, 1972

TO Memorandum To The File

FROM ORIGINAL SIGNED R.W. ELLISON
R. W. Ellison
Bridge Administration Engineer

SUBJECT

Fremont Bridge
Contract 7276
Meeting With Contractor Re. Price Agreement For Cracked Girder Repair

During the morning of June 28, 1972, a meeting was held in the small conference room of the Oregon State Highway Building regarding the issuance of a price agreement to cover the cost of revisions brought about by the fracture in the main tie girder at panel point 3 (west) of the subject structure.

Those in attendance were: Mr. Tom Edwards, Mr. Walter Hart, Mr. Al Rear, Mr. R. W. Ellison and Mr. Leonard Lindas, Oregon State Highway Division; Mr. Al Tokola and Mr. Jay Murphy, Murphy Pacific; Mr. Al Kostelic and Mr. Donald Shupp, General Insurance Company of America.

Mr. Edwards opened the meeting by indicating that our analysis of the items involved in the corrective work and delay amount to $5,020,075 plus wage escalation costs for subcontractors. The $5,020,075 includes a $.66 a hour wage escalation for the contractor's forces. He suggested that we prepare a price agreement at a later date to cover wage escalation for subcontractors, which will amount to about $184,000.

Mr. Tokola interjected that one barge which has been shown for only a five and one-half month period should actually be shown for the full time period involved or for an additional four months or an additional $72,000. Also due to a change made in the original revisions by Oregon State Highway Division the amount of steel involved has increased causing an increase of cost of $29,000.

Mr. Edwards stated that by including these increases we in effect have the following proposal:

$ 5,121,075	Without subcontractor escalation
184,000	For subcontractor escalation
$ 5,305,075	Total

NOTED
A. E. JOHNSON

Rec'd - AED
7-3-72

He further indicated that if Murphy Pacific agrees to this amount he anticipates no trouble with the Highway Commission, but there will probably be a little difficulty selling it to the Federal Highway Administration. The Federal Highway Administration has some reservations about paying 50% of the monthly rental rate for standby time. However, he does believe that the package can be sold to the Federal Highway Administration. Such a lump sum price agreement would be contingent upon our being able to receive Federal Highway Administration approval.

The price agreement could also include the basic time extension which was discussed with Murphy Pacific last week, which includes credit for productive time involved in construction of the main span at Swan Island and erection of the back spans on the east side of the river. This would give Murphy Pacific until July, 1973, to complete the project. Both Mr. Edwards and Mr. Murphy indicated they believe this is sufficient time within which to complete the project. Mr. Tokola stated that they are going all out on construction work right now.

Mr. Edwards indicated that he is unable to give Murphy Pacific a release of responsibility relative to the fractured girder at this time. However, the best analysis indicates that Murphy Pacific exposure isn't much.

He stated that the price agreement can be written very shortly. The process involved is for Murphy Pacific and the Oregon State Highway Division to sign the price agreement and then present it to the Federal Highway Administration for approval.

In answer to Mr. Tokola's question, Mr. Edwards again reiterated that the State will not acknowledge that Murphy Pacific is not responsible for the fracture at this time.

Mr. Tokola asked that if signing the price agreement would allow release of a payment for work done to date which is covered by the price agreement. Mr. Edwards indicated such a payment would be made.

Mr. Murphy stated that the legal and time elements of such a price agreement are of concern to him. He wants a time extension included in the change order. He wants the price agreement written for $5,305,075 including an escalation allowance for subcontractors. Mr. Edwards again agreed that the price agreement will include a time extension.

Mr. Murphy and his people adjourned from the room for a private conference. Upon returning Mr. Murphy indicated he wants any language included relative to responsibility which is allowed by the specifications, State law, et cetera. He is willing to sign the price agreement for the price and time extension as discussed, but is still in a fog regarding legal implications. He wants that aspect reviewed by his lawyers.

Mr. Edwards stated that the general specifications cover responsibility for defects and suggested that the price agreement remain silent as to indemnification letting the contract requirements stand.

Mr. Murphy countered that he would like to see something on responsibility included and suggested that Mr. Lindas and Mr. Kobin get together and agree on some wording. Mr. Edwards agreed to this.

Mr. Murphy indicated he would like to receive the price agreement as soon as possible since he has other people who must review the price agreement. Mr. Edwards indicated he should be able to submit the agreement either Friday or Monday.

Mr. Lindas pointed out that Section 7-25, Page 43 of the standard specifications refers to contractor's responsibility.

Mr. Shupp stated that since there are many other people involved, he would like to have the agreement delivered to Mr. Tokola Friday morning in order that it may be in Murphy Pacific's California offices Friday afternoon for review by the Murphy Pacific people involved. He further stated that work on this project has progressed as fast and as far as the contractor and the state can make it go under the circumstances. He believes this is a great plus for both parties.

RWE/ag

cc: Tom Edwards
Walter Hart
A. A. Rear
Leonard Lindas

RECEIVED
JUN 30 1972
OFFICE OF
STATE HIGHWAY ENGINEER

Gen. Files

RECEIVED
JUL 11 1972

OREGON STATE HIGHWAY DIVISION
INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon 97213
June 23, 1972

7276

To: Memo To The Files

SUBJECT: Fremont Bridge Superstructure
Contract No. 7276
Painting of High Strength Bolts

On June 22, a meeting was held in the Bridge Engineer's office to discuss Murphy Pacific's proposal for painting of high strength bolts as contained in Mr. Tokola's letter of June 20, 1972. Attending were A. E. Johnson, Walt Hart, Jim Chidsey, Dean Mandrell, Dan Bacon and Ed Hardt.

Klaas Brothers proposal as contained in their June 13, letter was thoroughly discussed by the group and the following conclusions were reached listed in the same numerical order as Klaas's letter.

1. An Extra Work Order will be prepared to pay for the cost of sandblasting and priming the previously unpainted top flanges of the floor beam system.

2. The group agreed that the only satisfactory way to clean the rusted high strength bolts is by sandblasting. The "newer" bolts which have not yet rusted may still be cleaned satisfactorily by wire brush and solvent. Pending final approval by Mr. Edwards, the contractor will be directed to sandblast rusty high strength bolts and apply inorganic zinc primer per the original specifications.

3. Same comments as (2) above.

4. The contract cleaning method (pressure water wash) will be utilized. If this fails to produce an acceptable job of cleaning, then steam cleaning or other means will have to be considered and whether or not this is an extra to the contract will be determined later.

5. We concur with the Contractor's statement that as much topcoating as possible should be done this season.

On June 23, Walt Hart called and said that he had discussed the sandblasting question with Mr. Edwards and we were to proceed as previously discussed with sandblasting where necessary.

H. S. COULTER
Metropolitan Engineer
By:-
Edward L. Hardt
Assistant Metropolitan Engineer

ELH:pb

cc: A. E. Johnson
Walter Hart
Jim Chidsey
R. O. Cunningham

NOTED
TOM EDWARDS

NOTED
A. E. JOHNSON

Gen. Files

RECEIVED
JUL 11 1972

STATE OF OREGON
HIGHWAY DIVISION
METROPOLITAN SECTION
5921 N. E. Glisan Portland, Oregon 97213 Phone 229-6971

7276

June 23, 1972

Murphy Pacific Enterprises
5400 N. Channel
Swan Island
Portland, Oregon 97217

ATTENTION: Mr. Alpo J. Tokola

Re: Fremont Bridge Superstructure
Contract No. 7276

Gentlemen:

Your letter of June 20, which requested certain changes in the painting procedure for the Fremont Bridge together with accompanying letters from Klaas Bros., Inc. and Mobil Chemical Company, in the absence of Mr. Cunningham have been referred to this office. Our answers to these requests follow in the same sequence as in Klaas Bros. letter.

The State will compensate you for sandblasting and priming the previously uncoated topflanges of the floor system. Care should be taken in the selection of the primer to assure that it is compatible with the Nelson stud welding to be done later.

With respect to cleaning and painting of high strength bolts, due to the rusted condition of those nuts and bolts which have been in place for some time, it is our feeling that the only way to get an adequate job of cleaning is by sandblasting. Therefore, we must insist that the original contract requirement be fulfilled whereby the high strength bolts are to be sandblasted to white metal and three mils of inorganic zinc primer applied. Cleaning by wire brushing and solvents as proposed last year can be utilized on the "new" bolts where heavy rust has not yet appeared. If you desire, the State will make a determination as to which bolts can be solvent-wire brushed cleaned.

With respect to washing the zinc primer prior to application of topcoat, the Contract Specifications require a pressure water wash and this should be done. After this is done, if it is determined that this is not sufficient cleaning, than more extreme cleaning methods will have to be used.

NOTED
TOM EDWARDS

NOTED
A. E. JOHNSON

With respect to Klaas's statement that "The topcoat should be applied to all the surfaces possible this year" we wholehcartedly concur in this thought and would encourage you to do just that. If you like, we are open to discussions regarding modification of the painting specification which would allow you to paint the floor system before the concrete deck is placed thereon.

H. S. COULTER
Metropolitan Engineer

By:

EDWARD L. HARDT
Assistant Metropolitan Engineer

ELH:pb

cc: A. E. Johnson
Walt Hart
John Jenkins
R. O. Cunningham

RECEIVED
JUN 26 1972
OFFICE OF
STATE HIGHWAY ENGINEER

MURPHY PACIFIC ENTERPRISES
4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

Oregon State Highway Division
5821 N.E. Glisan Street
Portland, Oregon 97213

June 20, 1972

Attention: Mr. R.O. Cunningham
Resident Bridge Engineer

Gentlemen:

As a result of numerous meetings some of which you have been present, our painting contractor Klaas Bros, Inc., in conjunction with their supplier Mobil Chemical Company have forwarded to us their recommendations for modifications to the present paint specifications.

We are forwarding to you their recommendation for your consideration with the following comments:

A) Because of the long delay of this project due to the fracture of Panel Point 3 we feel that the requested modifications would be beneficial to the ultimate coating of the steel.

B) We believe that the bridge could be opened for traffic much earlier by the recommended modifications.

C) By minimizing the sand blasting the emition of pollutants into the atmosphere and water would be significantly reduced.

D) The only cost to the State of Oregon would be item (1), which would be performed on force account basis under your supervision.

We ask that you reply to this request at an early date so field painting can start immediately.

Very truly yours,

MURPHY PACIFIC ENTERPRISES

Alpo J. Tokola
Project Manager

METROPOLITAN ENGINEER
RECEIVED
JUN 20 1972
ME AME AME MOE MDE MTE

TELEPHONE (415) 653-1717 . CABLE 'MYPAC' . MAILING ADDRESS P.O. BOX 23007, OAKLAND, CALIFORNIA 94623

KLAAS BROS. INC.

2012 HYPERION AVENUE
LOS ANGELES, CALIFORNIA 90027
661-1158

June 13, 1972

Murphy Pacific Enterprises
5400 North Channel
Swan Island
Portland, Oregon 97217

Attention: Mr. Alpo J. Tokola

Gentlemen:

Due to the fact that it would be very detrimental to the zinc primer coat to remain exposed for another winter without top coating, and in order to complete as much painting as possible this year, we submit the following recommendations for your consideration:

(1) Sandblast and apply three mils of inorganic zinc to the top flanges that were not previously coated. At the same time, repair the rust stains where it has affected the zinc by sandblasting and reapplying zinc where necessary.

OK By FHMA ✓

(2) Touch-up exterior bolted connections by thorough wire brushing and the application of one coat of Mobil Zinc 4 epoxy zinc rich primer, three mils dry film thickness. The final top coat to be applied at a total of ten mils dry film thickness in lieu of the specified five mils dry film thickness. Total mil thickness to be thirteen mils dry on all exterior field connections.

(3) Interior connections to be cleaned by wire brushing and apply one coat of 95 Series Masonic Dum Dum. This is a mastic type coating that provides a thick impervious barrier which excludes moisture and vapors.

(4) All areas showing discoloration and zinc salts will be cleaned by a pressure water wash to insure that all loose contaminants will be removed. NOTE: Discoloration will remain but will not be detrimental to the adhesion of the top coat.

OK

OK

(5) The top coat should be applied to all the surfaces possible this year in order to preserve the prime coat.

We wish to express the need to preserve the continuity of the prime coat steel. Sandblasting the bolts will destroy the adjacent zinc coated surfaces in very inaccessible areas (corners and crevices). Recoating these areas with inorganic zinc without excessive buildup of material would be impossible. The mil thickness of inorganic zinc is very critical. Excessive buildup of mils would result in brittleness and mud cracking which could cause premature failure of the coating.

We would like to point out that the State of California Division of Bay Toll Crossings recognized the need to protect the steel surfaces which remained uncoated after erection in the vicinity of field connections without adversely affecting the adjacent areas. The San Mateo Hayward Bridge, West Grand Avenue Viaduct and the San Diego Coronado Bridge have been touched up at the field connections by the hand wire brushing method for surface preparation followed by three mils of organic zinc. As verified by the Resident Engineer, the system is performing very successfully and will remain as a part of the special provisions on future projects.

If there are any questions on the above recommendations, please contact the undersigned.

Sincerely,

KLAAS BROS., INC.

Frank A. Klaas
President

FAK:lm

Mobil Chemical Company

MAINTENANCE AND MARINE
COATINGS DEPARTMENT

2647 EAST 37TH STREET
LOS ANGELES, CALIFORNIA 90058
TELEPHONE (213) 589-6781

June 13, 1972

Mr. Frank Klaas
Klaas Brothers Inc.
2012 Hyperion Avenue
Los Angeles, California 90027

FREMONT BRIDGE

Dear Mr. Klaas:

After completing an inspection of the Mobilzinc 1 coated steel now at the Murphy Pacific Corporation's yard in Swan Island, Portland, Oregon, I feel the following recommendations are in order:

Sandblast and apply three mils of inorganic zinc primer to the previously uncoated top flanges of the stringers and floor beams, and at the same time to sweep blast and reapply zinc to any areas showing rust staining.

Other areas showing evidence of zinc salts and other discoloration should be cleaned prior to application of the vinyl top coat by a fresh water rinse as called for in the specifications.

We further recommend that as much of the steel as possible receive the vinyl top coat this summer rather than allow it to be exposed throughout another winter with only a primer coat.

As to the problem of coating interior bolts and other surfaces which are inaccessible by normal methods, our recommendation is that they be cleaned insofar as practical by wire brush and one coat of 95 Series Masonoc Dum Dum be applied. This material can be supplied in a color approximating the Celadon Green color of the bridge.

Exterior bolt heads should be touched up by cleaning them with thorough wire brushing and application of one coat of Mobilzinc 4 Epoxy Zinc Rich Primer followed by 83-G-705 Celadon Green Vinyl Hi-Build Coating.

Very truly yours,

R. M. Miller

RMM:hi

R. M. Miller, Western Region Mgr.

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RECEIVED
JUN - 1972
FILING

OREGON STATE HIGHWAY DIVISION

7276

HIGHWAY BUILDING • SALEM, OREGON • 97310

June 21, 1972

Howard, Needles, Tammen & Bergendoff
1805 Grand Avenue
Kansas City, Missouri 64108

AGENDA
JUN 27 1972
5 4

MISC. CONTRACTS and AGREEMENTS No. 7400

Attention: Mr. Robert G. Crabtree

Gentlemen:

Time Extension for Consultant Agreement
Fremont Bridge Superstructure
Contract 7276

The State Highway Division has granted your request for a 170-calendar-day extension of time for your work in conjunction with the erection procedure check and design review on the Fremont Bridge.

copy made & filed with agreement

Your latest invoice will now be processed and forwarded to the Accounting Section for payment.

Very truly yours,

George M. Baldwin
Administrator of Highways

By

Tom Edwards
State Highway Engineer

bc: Federal Highway Administration
bbc: Floyd Query
F. B. Klaboe
A. E. Johnson
L. H. Young
C. T. Keasey
W. J. Hart
H. S. Coulter
V. E. Skoog
John Howard
RJW:DH cc

Phyllis please note on the agreement
96

NOTED
FLOYD QUERY

RECEIVED
JUN 22 1972
FOR [illegible]

OREGON STATE HIGHWAY DIVISION

7276

HIGHWAY BUILDING • SALEM, OREGON • 97310

DATE June 20, 1972

TO Oregon State Highway Commission

FROM Tom Edwards
State Highway Engineer

SUBJECT

**Time Extension - Consultant Agreement
Howard, Needles, Tammen & Bergendoff
(Fremont Bridge)**

On November 9, 1971, the Commission entered into an agreement with Howard, Needles, Tammen & Bergendoff for an erection procedure check and design review on the Fremont Bridge. The allotted time of 150 calendar days has been exceeded. Part of the necessary work under this agreement is to review the corrective measures proposed by others, and it is this item that will require more time.

The finite element analysis of the modified Panel Point 3 details, made by the firm of Parson, Brinckerhoff, Quade & Douglas, will be reviewed by Howard, Needles, Tammen & Bergendoff, and it is estimated that it will require an additional 170 calendar days to complete the work. The revised completion date will be September 25, 1972.

Interstate funds are being used for this work and we have the concurrence of the Federal Highway Administration. This is a time extension only and does not include increased funds.

I have approved the 170-calendar day extension of time and the matter will be on the agenda for your concurrence at the June 27 meeting.

cc: Floyd Query
George M. Baldwin
F. B. Klaboe
A. E. Johnson
W. J. Hart
V. E. Skoog
L. H. Young
H. S. Coulter
Gary Ross
Gary Sund

RJW:dh ms

RECEIVED
JUN 19 1972
FOR FILING

7276

June 15, 1972

TO Mr. Glen L. Green
Acting Division Engineer
Federal Highway Administration

bc George M. Baldwin
Tom Edwards
F. B. Klaboe
Walt Hart
V. E. Skoog
H. S. Coulter
R. O. Cunningham

FROM
A. E. Johnson
Assistant State Highway Engineer

SUBJECT Consultant Agreement with HNTB
Fremont Bridge Superstructure
FAP I-405-8(17)303
Contract 7276
Your File IO-35-FA

copy in Consultant file

The consultant agreement with Howard, Needles, Tammen & Bergendoff, dated November 9, 1971, for an erection procedure check and design review on the subject project has overrun the allotted time of 150 calendar days. Part of the necessary work under this agreement is to review the corrective measures proposed by others and it is this item that will require more time.

The finite element analysis of the modified Panel Point 3 details, made by the firm of Parsons, Brinckerhoff, Quade & Douglas, will be reviewed by Howard, Needles, Tammen & Bergendoff and it is estimated that it will require an additional 170 calendar days to complete the work. The revised completion date will be September 25, 1972.

May we have your concurrence in granting a time extension of 170 days under the terms of the agreement. Present estimates indicate that no additional fees will be required.

In order to place this time extension on the current month's Commission agenda, please telephone your decision to the Bridge Section at your earliest convenience.

RJW:dh ja

RECEIVED
JAN 27 1972

Form FHWA-121 (12-67)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

I-405-8(17)303

TO : Mr. George M. Baldwin, Administrator of Highways
Salem, Oregon

DATE: January 24, 1972

In reply refer to: 10-35-FA

7276

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure
Consultant Agreement with HNT&B

The Consultant Agreement with the Engineering firm Howard, Needles, Tammen & Bergendoff for the analysis of certain stresses in the subject structure is hereby formally approved.

The verbal authorization for the consultant to proceed was confirmed in our November 15 and December 2, 1971 memoranda.

cc: Region (10-00.331)

1-27-72
REFERRED TO
Young - Johnson
DEPUTY

RECEIVED
JAN 28 1972
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
F. B. KLABOE

NOTED
TOM EDWARDS

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
FEB 23 1972
FOR FILING

5 e
1-11-72

I-405-8(17)303
7276

January 17, 1972

Howard, Needles, Tammen & Bergendoff
1326 Fifth Avenue
Seattle, Washington 98101

Attention: Edgar Johnson

MISC. CONTRACTS and
AGREEMENTS No. 4400

Gentlemen:

Attached for your records is a fully executed copy of an agreement to analyze the design calculations and stresses on the main girder of the west span of the Fremont Bridge.

We have retained a fully executed copy of this agreement for the Commission's files.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

fkm
Att.
cc Walter Hart
(11 copies att.)
Attn: Robert Wright

RECEIVED
DEC 9 1971

Form FHWA-1B (12-67)
UNITED STATES GOVERNMENT

FOR FILING

Memorandum

I-405-8(17)303
7270 14-4

TO : Mr. R. L. Porter, State Highway Engineer
Salem, Oregon

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

DATE: December 10, 1971

In reply refer to: 08-35-FA

Merchant
cy Johnson
12-15-71

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure
Consultant Agreement with HNT&B

In a further review of the proposed agreement with Howard, Needles, Tammen, and Bergendoff for the reanalysis of the design and erection stresses in the subject structure it is noted that salary related and overhead costs are shown as a fixed percentage of the direct payroll costs. While the rates shown appear quite acceptable having been based on audited and approved rates experienced during the immediate past years they are not the actual costs incurred during the life of the contract as required by our PPM 40-6 for "anual costs plus a fixed fee" type of agreement.

NOTED
A. E. JOHNSON

We recognize that it has been argued that this should be a "specific rate of pay" type of agreement but we believe that due to the magnitude of the proposal and the extreme difficulty in maintaining the strict supervision and control required for that type of agreement that the "actual costs plus fixed fee" arrangement would be much more equitable for all concerned. In fact we believed the agreement which we reviewed and commented on in our December 2 memorandum to be of that type.

We must also point out that for any adjustment in the fixed fee to be eligible for Federal participation the adjustment must be based on changes in the scope, character or complexity of the work and not merely on an increase in the amount of work completed.

Although our December 2 memorandum indicated that the proposed agreement was generally acceptable as to form this does not imply approval of deviations from our regulations and policy and procedures unless these deviations are specifically mentioned. We trust that you may be able to revise or amend this agreement to accommodate the previously mentioned adjustments.

RECEIVED
DEC 14 1971
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

GPO 910-222

RECEIVED
DEC 1 1971
FOR FILING

FHWA-121 (12-67)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

I-405-8(17)303
7276

TO : Mr. R. L. Porter, State Highway Engineer
Salem, Oregon

DATE: December 2, 1971

In reply refer to: 08-35-FA

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure
Proposed Consultant Agreement with HNT&B

The proposed consultant agreement with the engineering firm Howard, Needles, Tammen and Bergendoff for the investigation of certain stresses in the subject structure has been reviewed as transmitted with Mr. Johnson's November 23 letter and has been found generally acceptable as to form. There are several references to the Bureau of Public Roads which should be revised to Federal Highway Administration. The pronoun used in the last paragraph on Page 1 appears to be indefinite as to whose opinion is to be reported. This should be corrected.

Please furnish three copies of the executed agreement for our formal action when they become available.

The November 9 verbal authorization to secure the services of a consultant as confirmed with our November 15 memorandum may be construed as authorization for this consultant to proceed under this agreement.

CY Marchand "Revise agreement and proceed" 12-3-71

RECEIVED
DEC 3 1971
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
TOM EDWARDS

NOTED
L. E. JOHNSON

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

GPO 910.222

FHWA-121 (12-67)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

FOR NEW
I-405-8(17)303
12-76

TO : Mr. R. L. Porter, State Highway Engineer
Salem, Oregon

DATE: November 15, 1971

In reply refer to: 08-35-FA

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(17)303
Superstructure, Fremont Bridge
Consultant Agreement

This is written confirmation of our verbal authorization of November 9 to secure the services of an engineering firm separate from the designers to analyze the design and erection procedure stresses in the subject structure subject to our review and approval of a satisfactory consultant agreement prepared in accordance with the requirements of PPM 40-6.

This is also authorization effective November 1 to obtain the services of a metallurgist to inspect the cracked girder, obtain sample coupons, analyze the steel and submit a written report to be handled as a consultant agreement.

It is our understanding that the firm Howard, Needles, Tammen and Bergendoff has been selected to analyze the design and Mr. Harry Czyzewski of Metallurgical Engineers Incorporated for the metallurgical analysis.

Costs for these services are considered or eligible for Federal participation as part of the construction engineering.

copy to Merchant sent 11-19-71

RECEIVED
NOV 18 1971
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
TOM EDWARDS

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

GPO 910-222

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NOV 12 1971
FOR FILING

I-405-8(17)303
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
November 10, 1971

SUBJECT: Fremont Bridge Superstructure
Contract 7276

To:
Memo to the File

A. E. Johnson

In a telephone conversation with Ed Johnston of Howard, Needles, Tammen & Bergendoff, on November 9, a request was made to permit the immediate start of their work on analyzing the Fremont Bridge superstructure.

I immediately contacted Mr. Schell of the Federal Highway Administration and requested permission to make November 9 the beginning date for the consultant's agreement with Howard, Needles, Tammen & Bergendoff for this work so that they could begin work immediately.

Today, November 10, I received a phone call from Mr. Schell indicating that the consultant could begin work on this date with his costs as a participating item. This, of course, is subject to the furnishing by Howard, Needles, Tammen & Bergendoff of cost data justifying their engineering proposal. I do not anticipate any problem from this standpoint.

Mr. Ed Johnston was immediately notified by phone and told to proceed with the work as previously directed.

Ivan D. Merchant
Bridge Engineer

IDM:dh

cc A. E. Johnson
W. J. Hart

RECEIVED
NOV 11 1971
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUN 27 1972
FOR FILING

FORM E-30 (REV. 10-69)

7276

File

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
June 21, 1972

SUBJECT: Fremont Bridge Repair
Contract #7276

To: Mr. A. E. Johnson
Asst. State Highway Engineer
O F F I C E

Mr. Ed Rief plans to go to Berkely, California on June 28 through 30 to talk to California Highway Division inspectors about repair of the Fremont Bridge. This will be an orientation meeting to familiarize Mr. Rief with the California inspection personnel and the American Bridge plant and to point out to the inspectors the requirements of OSHD.

Estimated costs for this trip, to be charged against the project engineering, 626-1013-900, are as follows:

Round trip air fare to Oakland	$ 96.00
Lodging, 2 nights @ $20	40.00
Meals	18.75
Ground transportation, phone, etc.	45.00
Total	$199.75

May we have your authorization for this trip.

This will be the first of several trips by Mr. Rief or Mr. Miller which will be made at intervals during the fabrication period. Should each of these trips be handled individually or is there some way that blanket authorization may be obtained for the series of trips?

6-26-72 Rowland Approved for both 10 Jenkins

6-27 Orig to Jenkins cy to Johnson acctg files

JOHN C. JENKINS
Engineer of Materials & Research

JCJ:eb

cc: Ed Rief

Deputy State Highway Engineer

APPROVED:
STATE HIGHWAY ENGINEER
DATE 6/27/72

RECEIVED
JUN 30 1972
7276

June 30, 1972

TO Glen L. Green, Acting Division Engineer
Federal Highway Administration

Federal-aid Project
No. I-405-8(17)303

FROM George H. Baldwin
Administrator of Highways

by

L. H. Young
Programming Engineer

SUBJECT Request: Change Order Approval

Contract 7276 Extra Work Order No. 4

Project Fremont Bridge

Highway Stadium Freeway

County Multnomah

The order covers furnishing and installing guard rail to protect the electrical load center located on the face of pier 2E. This work is necessary in order to protect the installation from vehicles which pass nearby.

The work was tentatively recommended for approval by the Federal Highway Administration Area Engineer on March 31, 1972.

Your approval as of March 31, 1972 is requested.

Attachments
JK:dgk

RECEIVED
JUN 22 1972
FOR FILING

OREGON STATE HIGHWAY DEPARTMENT

7276

June 19, 1972

Mr. John L. Beaton
Materials & Research Engineer
Division of Highways
5900 Folsom Blvd.
Sacramento, California 95819

Re: Fremont Bridge Repair
Contract #7276

Dear Mr. Beaton:

As a follow-up of my letter of May 31, 1972 on the above subject, it appears that shop procedures, welder and weld procedure qualifications, and other necessary materials documentation will be assembled soon so that a meeting with your inspection people and our Mr. Ed Rief would be worth while. Approved shop drawings are not ready, but it is hoped that some will be on hand within the next two weeks. Mr. Rief would like to meet with representatives of the Berkeley office and look over the Murphy Pacific plant.

For us, the period June 28th through June 30th looks like a satisfactory time for the meeting. Would you please let me know if one or more of these days would be agreeable to your people.

Very truly yours,

GEORGE M. BALDWIN
Administrator of Highways

By

NOTED
A. E. JOHNSON

JOHN C. JENKINS
Engineer of Materials & Research

JCJ:sb

cc: Tom Edwards
A. E. Johnson
W. J. Hart
M. S. Coulter
R. D. Cunningham
E. J. Rief

RECEIVED
JUN 19 1972
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUN 9 1972
FOR FILING

5

MURPHY PACIFIC ENTERPRISES

4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

7276

June 7, 1972

Mr. Tom Edwards
State Highway Engineer
Oregon State Highway Division
Highway Building
Salem, Oregon 97310

Dear Mr. Edwards:

I appreciated the opportunity of talking with you at length over the telephone on June 1, 1972 relative to the contents of your letter dated May 19, 1972, and our thoughts for proceeding. I also want to thank you for setting up a meeting on June 20, 1972 at your office in order to continue negotiations on the lump sum price settlement set forth in our letter dated May 9, 1972 brought about by the girder fracture and its attendant revisions. The time extensions and indemnity issues should also be resolved, thereby resolving the major issues, and it would be of immeasurable value to the State and us to get this all wrapped up.

This will also serve to acknowledge your letter of June 1, 1972. We are not at all certain that that proceeding, in any event, by force account method is proper. The Contract does not appear to lend itself to this concept in view of the nature of the fracture and revisions.

We are confident that these matters can be resolved so that an appropriate order can be executed.

6-9
Cys to Kleabe
Johnson
Hart
Linden
Coulter, attn Ed Hardt
Cunningham

Very truly yours,

MURPHY PACIFIC ENTERPRISES

Jay P. Murphy
Project Sponsor

NOTED
TOM EDWARDS

RECEIVED
JUN 9 1972
OFFICE OF
STATE HIGHWAY ENGINEER

JPM:nl

NOTED
TOM EDWARDS

RECEIVED
JUN 7 1972
FOR FILING

MURPHY PACIFIC ENTERPRISES

4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

7276

June 6, 1972

Oregon State Highway Division
Highway Building
Salem, Oregon 97310

Attention Mr. Tom Edwards
State Highway Engineer

Gentlemen:

Fremont Bridge, Contract 7276
Girder Fracture, Additional Testing

Receipt is acknowledged of your letter dated June 2, 1972 relative to the sampling of additional steel in the areas of P.P. No. 3 East and West Backspans.

Please be advised that Mr. Al Tokola will give full cooperation to Mr. Czyzewski in the performance of this work.

Very truly yours,

MURPHY PACIFIC ENTERPRISES

Jay P. Murphy
Project Sponsor

6-8-72
cy Kleator
Al Jakimow
Walt Hart
L.S. Coulter
W.S. Coulter
Allen Hart
R.O. Cunningham

JPM:nl

c.c. Mr. A. Tokola

RECEIVED
JUN 8 1972
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
TOM EDWARDS

TELEPHONE (415) 653-1717 . CABLE 'MYPAC' . MAILING ADDRESS P.O. BOX 23007, OAKLAND, CALIFORNIA 94623

RECEIVED
JUN 2 - 1972
FOR FILING

7276

June 2, 1972

Murphy Pacific Enterprises
4300 Eastshore Highway
Emeryville, California 94608

bc George M. Baldwin
Tom Edwards
F. B. Klaboe
Walter J. Hart
H. S. Coulter
R. O. Cunningham
E. J. Rief
J. Wood

Gentlemen:

Fremont Bridge Superstructure
Contract 7276
Structural Steel Inspection

This is to advise you that inspection of the fabrication of steel necessary for repair of Panel Point J on the west and the corresponding panel point on the east side of the subject structure will be performed by the California Division of Highways.

The State of California inspection personnel will be in the American Bridge facilities in South San Francisco to accomplish this inspection work.

Our District Inspection Engineer from Portland, Oregon, Mr. E. J. Rief, will visit the fabrication facility periodically in order that he will be familiar with the progress of the work.

Very truly yours,

George M. Baldwin
Administrator of Highways

By

A. E. Johnson
Assistant State Highway Engineer

cc Mr. A. J. Tokola
Project Manager
Murphy Pacific Enterprises
5051 North Channel
Portland, OR 97217

EME:ag ja

RECEIVED

FOR FILING

7276

June 2, 1972

bc George M. Baldwin
F. B. Klaboe
A. E. Johnson
Walt Hart
H. S. Coulter (1 print)
R. O. Cunningham "
I. D. Merchant "

Mr. Jay P. Murphy
Project Sponsor
Murphy Pacific Enterprises
P. O. Box 23007
Oakland, California 94623

Dear Mr. Murphy:

Fremont Bridge
Contract 7276

Enclosed are five reduced size prints of Drawing No. 28278, the final revised details for Panel Point 3. With minor exceptions this drawing is the same as the advanced material ordering print transmitted to you on May 10, 1972. The changes on the enclosed drawing consist of a revision to the lower web splice detail as shown in Section C-C and minor corrections to Sections A-A, B-B, E-E, and K-K.

Mr. Lowe of American Bridge has been kept advised of the above changes and was furnished prints of this drawing on May 24, 1972.

Very truly yours,

George M. Baldwin
Administrator of Highways
ORIGINAL SIGNED BY
By A.E. JOHNSON
for
Tom Edwards
State Highway Engineer

WJH:ag ja

Attachments (5)

cc Mr. A. J. Tokola (with print)
Project Manager
Murphy Pacific Enterprises
5051 North Channel
Portland, OR 97217

Mr. R. E. Simpson (with 3 print)
Federal Highway Administration
Box 304
Salem, OR 97308

RECEIVED
JUN 2 - 1972
FOR FILING

7276

June 2, 1972

Murphy Pacific Enterprises
4300 Eastshore Highway
Emeryville, California 94608

Gentlemen:

Fremont Bridge
Contract 7276
Girder Fracture, Additional Testing

In order that metallurgical tests relative to the cracking of the girder at Panel Point 3 of the subject structure may be completed by Metallurgical Engineers, Inc., it will be necessary for their representative, Mr. Harry Czyzewski, to perform additional work at the job site.

This work will include the taking of samples of steel from the north girder in the west span in the vicinity of Panel Point 3. In order to take these samples, it will be necessary for Mr. Czyzewski to go up on the scaffolding in this area.

It will also be necessary for him to perform certain tests in the east span at the corresponding panel point. This work will include removal of certain sections of steel from the portion of the girder which is to be remodeled.

It will be necessary for Mr. Czyzewski to work closely with Mr. Tokola, your Project Manager, in order to complete his testing and sampling, and I hope that he will receive Mr. Tokola's full cooperation in this matter.

Determination of responsibility in the matter of cracking of the girder cannot be made until Mr. Czyzewski's report of his findings has been completed. Mr. Tokola's

help in expediting the testing and sampling on the job site will help to expedite final settlement regarding the matter of responsibility.

Very truly yours,

George M. Baldwin
Administrator of Highways

By ORIGINAL SIGNED BY A.E. JOHNSON
for Tom Edwards
State Highway Engineer

cc Mr. A. J. Tokola
Project Manager
Murphy Pacific Enterprises
5051 North Channel
Portland, OR 97217

bc George M. Baldwin
F. B. Klaboe
A. E. Johnson
Walt Hart
H. S. Coulter
R. O. Cunningham

RWE:eg ja

RECEIVED
JUN 2 - 1972
FOR FILING

7276

June 1, 1972

Mr. Jay P. Murphy
Project Sponsor
Murphy Pacific Enterprises
Post Office Box 23007
Oakland, CA 94623

Dear Mr. Murphy:

Confirming our telephone conversation of this morning, we will expect to meet with you on Tuesday, June 20, concerning resolution of cost of re-fabrication of the four joints at Panel Points 3. We are highly pleased at your statement that you wish to expedite construction with the greatest possible speed and that you expect only a momentary shutdown due to this revision.

In the meantime, our staff will continue to analyze the cost picture involved. I reiterate to you that it is our desire and the desire of the Federal Highway Administration to wrap this agreement into one package if possible. If not, work will have to proceed by force account methods.

Very truly yours,

George H. Baldwin
Administrator of Highways

By

Tom Edwards
State Highway Engineer

cc A. Kostelic-Gen. Ins.

cc Al Tokola
Murphy Pacific Enterprises - Portland
F. B. Klaboe
A. E. Johnson
W. J. Hart
L. I. Lindas
H. S. Coulter
Ed Hardt
R. O. Cunningham

TE:cg ms

RECEIVED
JUN 2 - 1972
FOR FILING

Gen. Files

OREGON STATE
HIGHWAY DEPARTMENT

7276

May 31, 1972

NOTED
A. E. JOHNSON

Mr. John L. Beaton
Materials & Research Engineer
California Division of Highways
5900 Folsom Blvd.
Sacramento, California 95819

Re: Fremont Bridge Repair
Contract #7276

Dear Mr. Beaton:

I have been asked by our Bridge Section to indicate our acceptance of your terms for inspection of the Fremont Bridge repair work as indicated in your letter received here on May 19, 1972.

Our District Inspection Engineer, Mr. E. J. Rief, will be in Sacramento sometime in the near future to discuss this project with you. We will contact you to establish a definite schedule.

Very truly yours,

GEORGE M. BALDWIN
Administrator of Highways

By

JOHN C. JENKINS
Engineer of Materials & Research

JCJ:mb

cc: Tom Edwards
A. E. Johnson
W. J. Hart
M. S. Coulter
R. O. Cunningham
E. J. Rief

RECEIVED
JUN 1 1972
OFFICE OF
STATE HIGHWAY ENGINEER

STATE OF CALIFORNIA—BUSINESS AND TRANSPORTATION AGENCY

RONALD REAGAN, Governor

DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS
MATERIALS AND RESEARCH DEPARTMENT
5900 FOLSOM BLVD., SACRAMENTO 95819

File: State of Oregon
Fremont Bridge Repair
Cont. No. 7276

Mr. John C. Jenkins
Engineer of Materials and Research
Oregon State Highway Division
Materials Section
Salem, Oregon 97310

Dear Mr. Jenkins:

This is in reply to your letter of May 4, 1972, requesting inspection of the Fremont Bridge repair at American Bridge in South San Francisco.

This fabrication is scheduled to start in July or August, and we believe we will be in a position to handle the work at that time unless there is an unexpected change in our work load. There are 200 tons of A588 steel, and the fabricator plans to use two shifts for an estimated two months. We would probably have to use two inspectors, who should be on hand for most of the fabrication to provide proper control. Our charges would be based on actual cost plus overhead, a total of approximately $15 per hour.

This hourly rate would apply to inspection and preparation of inspection reports and also to monitoring or performance of nondestructive testing by our personnel. Delays in fabrication, due to problems or to procrastination by the fabricator, can of course add to the inspection cost. We would make every effort to limit our inspection time to that needed to control the job.

We assume you will provide specifications, plans, and approved shop drawings. The inspection will be handled by our Berkeley office.

Very truly yours,

JOHN L. BEATON, P.E.
Materials and Research Engineer

VMS:mw

cc: PGJonas
WECook
ARBeyer
LLowe

copy to Ellison
5/19/72

RECEIVED
MAY 19 1972
MATERIALS DIVISION OFFICE

NOTED
JOHN C. JENKINS

RECEIVED
JUN 2 - 1972
FOR FILING

Gen. Files

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon
May 30, 1972

7276

To: Memo to the File

SUBJECT: Fremont Bridge Superstructure
Stadium Freeway
Contract No. 7276

Barge No. 256

NOTED
A. L. JOHNSON

I have been advised by Mr. Tokola of Murphy Pacific that Barge No. 256 cannot by removed from the project and put to work elsewhere as was previously planned. It will therefore be on the project until the center span is floated into position.

Barge 256 is shown on Murphy Pacific sheet entitled "Fremont Bridge, P.P. 3 Delay and Modification, Schedule of Equipment Charges", as an outside rental of $ 17,400 per month. There is no time shown on Murphy Pacific's schedule for this barge being charged to change order work or stand-by. This will change that condition and Murphy Pacific will attempt to recover the five or six months of rental which will be charged to them. This would increase their bill for equipment stand-by approximately $ 100,000 dollars.

R.O. Cunningham
Resident Bridge Engineer

ROC:dgh

cc: Edwards
Johnson
Hart
Coulter

RECEIVED
MAY 31 1972
OFFICE OF
STATE HIGHWAY ENGINEER

MAY 26 1972
FOR FILING

Gen. Files

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

7276

DATE May 25, 1972

TO John Jenkins
Laboratory Bldg. Attention: J. E. Chidsey

FROM R. W. Ellison
R. W. Ellison
Bridge Administration Engineer

SUBJECT Fremont Bridge
Contract 7276
Strain Gauging

The procedure for erection of the remaining back spans as well as repair and completion of the erection of the span containing the cracked section on the subject project has been changed from that procedure used at the time the existing crack in the longitudinal girder occurred.

Because of this change, it is felt that instrumentation of this structure during erection will not provide information relative to the cause of the existing crack and, therefore, it has been determined that strain gauging during erection will not be performed.

If you have reason to believe that instrumentation, as indicated in your letter of May 19, 1972, would provide information beneficial to the solution of the problem of cracking in spite of the fact that the method of erection has been changed, we will re-consider the possibilities of instrumentation.

RWE/ag

cc A. E. Johnson
W. J. Hart
H. S. Coulter
L. L. Wallace

NOTED
A. E. JOHNSON

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MAY 25 1972
OFFICE OF
STATE HIGHWAY ENGINEER

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MAY 26 1972
FOR FILING

7276

May 25, 1972

Mr. Jay P. Murphy
Executive Vice President
Murphy Pacific Enterprises
4300 Eastshore Highway
Emeryville, CA 94608

Dear Mr. Murphy:

Re: Fremont Bridge Superstructure
Contract 7276

Mr. Al Tokola, in conversation with Mr. Ed Hardt, Metropolitan Bridge Engineer, has requested additional information regarding the erection of the original four G sections, right and left east, at Panel Point 3.

Attached is a copy of the Memo to File concerning a meeting held on December 14, 1971, at which I advised the people present that the steel at Panel Point 3 of the east backspan was not to be erected until the cause of failure in Panel Point 3 west had been determined. Mr. Donald W. Shupp was at that meeting, and I was advised that he would be on the project as engineer.

Very truly yours,

George M. Baldwin
Administrator of Highways

By

Tom Edwards
State Highway Engineer

cc Al Tokola
Murphy Pacific Enterprises - Portland

Albert Kostelic, General Insurance - San Francisco
bc F. B. Klaboe
A. E. Johnson
W. J. Hart
L. I. Lindas
H. S. Coulter
Ed Hardt
R. O. Cunningham

AEJ:ja ms

FORM S.HD (6-70)

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

December 17, 1971

To: MEMO TO FILE

SUBJECT: Fremont Bridge
Contract #7276

On December 14, I met with the following people concerning the Fremont Bridge:

Donald W. Shupp	Surety Representative
Wayne S. Jensen	" "
Don Purcell	" "
Al Kostelic	" "
Donald Humm	1st Western Bank & Tel.

They stated unequivocally that they were providing the money as required by Murphy Pacific to complete the Fremont Bridge. They were in accord that no firm decision should be taken with respect to Panel Point 3 until such time as the cause of the existing failure has been determined.

They stressed that continued communications between the contractor, the bonding people, and the Division should be maintained.

I advised them that I did not intend to permit erection of steel at Panel Point 3 of the east back span until the cause of failure at Panel Point 3 west has been determined.

ORIGINAL SIGNED
TOM EDWARDS

Tom Edwards
Deputy State Highway Engineer

TE:ms
cc A. E. Johnson
I. D. Merchant
R. L. Schroeder

NOTED
A.E. JOHNSON

RECEIVED
MAY 22 1972
FOR FILING

7276

May 19, 1972

Mr. Jay P. Murphy
Executive Vice President
Murphy Pacific Enterprises
4300 Eastshore Highway
Emeryville, CA 94608

Dear Sir:

Fremont Bridge, Contract 7276

I have reviewed your proposal of May 9, 1972, to do the revision work at Panel Point 3 as set forth in my letter of March 9. The lump sum price quotation and the conditional restrictions on that quotation are unacceptable to the State. A preliminary audit of the backup data of the lump sum quotation indicates several areas of substantial disagreement.

The final investigative reports on the girder fracture are not yet in. Upon completion of these investigations, a finding of fact and assessment of responsibility will be made. It is anticipated that our determination of responsibility will be made within approximately 60 days. Until that time, the State cannot agree to the release of any parties from responsibility for the fracture in the west back span of the tie girder.

The work must proceed toward completion of the structure during this period of determination of responsibility. Within this period we propose to pay you for all material, labor and operating equipment cost chargeable to the revision to the new Panel Point 3 detail and will include:

1. Removal of tie girder sections 4G (R & L), west back span.

2. Fabrication of four sections 4G (R & L, E & W), as per revised plans.

3. Remodeling of four sections 4G (R & L, E & W), as per revised plans.

4. Replacing girder sections 4G (R & L), west back span.

Operating equipment is defined as equipment actually engaged in the above operations and does not include standby time for this or any other equipment.

Payment will be made upon presentation of bills for all work attendant to the above operations. Such payment is for the purpose of making progress vouchers and is not admission of fault by either party.

Negotiation toward a lump sum price in settlement of all work at Panel Point 3 will be commenced upon completion of the fact finding and assessment of responsibility. Mr. Cunningham has been directed to set up an accounting coding procedure which will allow positive identification of all bills.

No action can be taken on the request for a time extension and release from liquidated damages due to the October 28, 1971 fracture in the west back span tie girder until the determination of responsibility is made; however, no deduction of liquidated damages will be made pending determination of responsibility.

Very truly yours,

George M. Baldwin
Administrator of Highways

By

Tom Edwards
State Highway Engineer

bc George M. Baldwin
F. B. Klaboe
A. E. Johnson
Walt Hart
L. I. Lindas
H. S. Coulter
R. O. Cunningham

WJH:dh/AEJ/LIL:ja ia

LEE JOHNSON
ATTORNEY GENERAL

JAMES W. DURHAM, JR.
DEPUTY ATTORNEY GENERAL

RECEIVED
MAY 19 1972
FOR FILING

DEPARTMENT OF JUSTICE
100 STATE OFFICE BUILDING
SALEM, OREGON 97310
TELEPHONE: (503) 378-6348

May 18, 1972

TRIAL DIVISION

JOHN E. MOORE
CHIEF TRIAL COUNSEL

WALLACE CARPENTER
ASSISTANT CHIEF TRIAL COUNSEL

LEONARD I. LINDAS
KEITH R. HALONEY
ASSISTANT ATTORNEYS GENERAL AND COUNSEL

JAMES A. BLEVINS
JAMES P. CRONAN, JR.
QUINTIN B. ESTELL
LAWRENCE J. HALL
LESLIE B. HAMPTON
ROBERT A. HOLLAND
DONALD J. HOWE
JOHN R. McCULLOCH
FRANK G. McKINNEY
EARL M. PRESTON
R. KEN ROBERTS
JIM C. RUSSELL
JAMES A. SANDERSON
JACK L. SOLLIS
CHARLOTTE H. SCHNEIDER
ASSISTANT ATTORNEYS GENERAL

7276

Mr. Diarmuid F. O'Scannlain
Public Utility Commissioner
200 Public Service Building
Salem, Oregon 97310

Attention: Lon Topaz
Assistant Commissioner

Re: Impaired clearance Freemont Bridge with the tracks of the Portland Terminal Railway Company ~~PUX 828~~ 820 ?

Dear Mr. O'Scannlain:

The application that has been previously forwarded should be revised by interlineation to read as follows:

Paragraph 3 "The impairment of clearances will be as follows: A falsework structure which is approximately 8 feet 2 5/8 inches from the centerline of track, thus impairing the standard horizonal clearance to the extent of 3 3/8 inches throughout the approximately 4 foot length of the structure.

To show this new impaired clearance, please find enclosed an original and two copies of the drawing for your use and service upon the railroad company.

Very truly yours,

LEE JOHNSON
Attorney General

Jack L. Sollis
Assistant Attorney General
Trial Division

JLS:jm
encs.
cc: Tom Edwards
H. S. Coulter
Frank D. Morgan
T. W. Litchfield

SOLICITOR COPY NOTED

RECEIVED
MAY 19 1972
OF
STATE HIGHWAY ENGINEER

DEEMED
U. MAY 16 1972
FOR FILING

7276

May 15, 1972

Mr. Jay P. Murphy
Project Sponsor
Murphy Pacific Enterprises
Post Office Box 23007
Oakland, CA 94623

Dear Mr. Murphy:

Re: Fremont Bridge
Contract No. 7276

Receipt is acknowledge of your May 9 letter stating a lump sum price in the amount of $5,506,518 for correcting Panel Point 3 at its four points of occurrence in the structure.

You have been ordered to proceed with the corrections. Our staff, as you know, is analyzing the computations and we will communicate with you further as soon as this work is done.

Very truly yours,

George M. Baldwin
Administrator of Highways

By

Tom Edwards
State Highway Engineer

TE:mm

bc Federal Highway Administration
F. B. Klaboe
A. E. Johnson
W. J. Hart

MURPHY PACIFIC ENTERPRISES
4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

May 9, 1972

Oregon State Highway Division
Highway Building
Salem, Oregon 97310

Attention Mr. Tom Edwards
State Highway Engineer

Gentlemen:

Fremont Bridge
OSH Contract No. 7276

This will acknowledge receipt of the drawing "Details at Panel Point 3" dated April 21, 1972 and as modified May 1, 1972. Pursuant to your letter of March 9, 1972 we enclose a quotation for a lump sum price for this work, as follows:

Labor	$ 915,699
Equipment	2,007,656
Materials	224,384
Subcontracts	954,329
Overhead	908,814
	$5,010,882
Markup	495,636
Total	$5,506,518

TELEPHONE (415) 653-1717 . CABLE 'MYPAC' . MAILING ADDRESS P.O. BOX 23007, OAKLAND, CALIFORNIA 94623

This quotation is conditioned that we receive sufficient time extension to our contract to allow completion of the project at a reasonable rate. This quotation is further conditioned that the State of Oregon will hold Murphy Pacific Enterprises harmless from any claims for damages resulting from the fracture of October 28, 1971.

We hereby request that the State of Oregon issue a modification to our contract for the lump sum price stated above as per Section 4-4 "Extra Work" in the Standard Specifications.

Very truly yours,

MURPHY PACIFIC ENTERPRISES

Jay P. Murphy
Project Sponsor

JPM:nl

RECEIVED
MAY 12 1972
FOR FILING

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem

DATE May 12, 1972

TO V. E. Skoog
Controller

7276

FROM A. E. Johnson
Assistant State Highway Engineer

SUBJECT Inspection Agreement with
Pittsburgh Testing Laboratory
Fremont Bridge Superstructure
Contract No. 7276

Please be advised that the final invoice, No. P-10-2, for work done by Pittsburgh Testing Laboratory in conjunction with the inspection of the structural steel on the above project is hereby released for payment.

All work under this agreement has been accomplished in a manner satisfactory to the State.

cc Tom Edwards
F. B. Klaboe
Walt Hart
L. H. Young
H. S. Coulter
R. O. Cunningham

RJW:dh ja

Gen Files

RECEIVED
MAY 1972
FOR FILING

7276

MURPHY PACIFIC ENTERPRISES

4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

State Of Oregon
Department of Transportation
Highway Division
5821 N.E. Glisan
Portland, Oregon 97213

May 10, 1972
Report #6

REFERRED TO
A E Johnson
Date: 5-12 By: KMcT
For: Your information
Due Date:

Attention: Mr. R.O. Cunningham
Resident Bridge Engineer

Subject: Labor & Equipment directly effected by the Girder Failure of 10-28-71 - Period of 4-1-72 to 4-30-72

Gentlemen:

NOTED
A. E. JOHNSON

The following lists reflect labor and equipment that continues to be directly idled by the girder failure of October 28, 1971. This is the sixth such monthly report.

Equipment idled @ West Back-Span site:

1) Manitowoc 4100 W Crawler Crane
1) 20' Office trailer
1) Stairway tower
1) Falsework tower
2) Concrete footings
1) 600cfm Joy Air compressor (as of 11-19-71)
1) Chemical toilet (rental: L&M Service)
apx. 19,000 sq. ft. safety nets
misc. barricades and lights

RECEIVED
MAY 23 1972
OFFICE OF
STATE HIGHWAY ENGINEER

Equipment idled @ East Back_Span site (as of Monday, 12-20-71):

1) Manitowoc 4100 W Crawler Crane (as of 11-23-71)
1) 20' Office trailer
1) 40' Change/shack/trailer
1) Falsework tower
1) Stairway tower
2) FW 1 footings
2) FW 2 footings
1) Jaeger 600cfm electric air compressor
1) Traveler gantry

METROPOLITAN ENGINEER
RECEIVED
MAY 1 5 1972
ME AME BME MDE MTE

MURPHY PACIFIC ENTERPRISES
4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

Labor flow for the period of 4-1-72 to 4-30-72:

40 men on the payroll as of March 31, 1972

2 Ironworkers laid off, 4-10-72

1 Ironworker Apprentice quit, 4-11-72

1 Ironworker Apprentice rehired, 4-12-72

1 Ironworker quit, 4-13-72

1 Operating Engineer (Oiler) rehired, 4-21-72

38 men on the payroll as of Sunday, April 30, 1972.

Work for April was concentrated at our Swan Island Yard; to satisfy labor needs during construction of the Center Span, these labor fluctuations took place.

Very truly yours,

Theodore D. Fox

cc's: A. Tokola
J. Riffell
W. Choate
~~Tom Crowley~~
WALT HART
H. S. COUTER

TELEPHONE (415) 653-1717 . CABLE 'MYPAC' . MAILING ADDRESS P.O. BOX 23007, OAKLAND, CALIFORNIA 94623

RECEIVED
MAY 11 1972
FOR FILING

7276

May 10, 1972

Mr. Jay Murphy
Executive Vice President
Murphy Pacific Enterprises
4300 Eastshore Highway
Emeryville, CA 94608

Dear Mr. Murphy:

Panel Point 3 Detail
Fremont Bridge

This will confirm my verbal instructions to you on April 29, 1972, to proceed with the ordering of materials for the revised Panel Point 3 detail. Those instructions were subsequently modified on May 1 to change the bottom flange and lower web thicknesses from 2 1/2 inches to 2 3/4 inches.

Attached is a print, dated April 21, 1972, of the details of Panel Point 3. The modifications are indicated in red. Your material order should be based on this print.

This letter shall also serve as your order to do what is necessary to complete the de-erection of the damaged portion of the structure and its companion piece on the north girder and to proceed with the necessary work attendant to modifying the not yet erected companion pieces on the east shore of the river.

Very truly yours,

George H. Baldwin
Administrator of Highways

By

Tom Edwards
State Highway Engineer

bc F. B. Klaboe
A. E. Johnson
R. E. Simpson
H. S. Coulter
R. O. Cunningham
W. J. Hart
WJH:dh/TE:ms

RECEIVED
MAY 8 - 1972
FOR FILING
7276

May 4, 1972

Mr. Jay Murphy
Executive Vice President
Murphy Pacific Enterprises
4300 Eastshore Highway
Emeryville, CA 94608

Dear Mr. Murphy:

Panel Point 3 Detail
Fremont Bridge

This will confirm my verbal instructions to you on April 29, 1972, to proceed with the ordering of materials for the revised Panel Point 3 detail. Those instructions were subsequently modified on May 1 to change the bottom flange and lower web thicknesses from 2 1/2 inches to 2 3/4 inches.

Attached is a print, dated April 21, 1972, of the details of Panel Point 3. The modifications are indicated in red. Your material order should be based on this print.

Very truly yours,

George M. Baldwin
Administrator of Highways

By ORIGINAL SIGNED
TOM EDWARDS

Tom Edwards
State Highway Engineer

Attachment
WJH:dh cg
bc: F. B.Klaboe
A. E. Johnson
R. E. Simpson /w/ att.
H. S. Coulter /w/ att.
R. O. Cunningham /w/ att.
W. J. Hart

NOTED
TOM EDWARDS

MADE BY _____ IN CHARGE OF _____
CHECKED BY _____

44'-10"
28'-0¼"
16'-9¾"
TOP FLANGE PL 2"x66" (EXIST.)
5% SLOPE
WEB PL'S 1"x142" (EXIST.)
G3
EXIST. SPLICE
EXIST. STIFF. @ AT GIRDER SPLICE
2 SPLICE PL'S ½"x17½", SEE SH. NO. 34
WALKWAY, FOR DETAILS SEE SECTION A-A
WEB PL'S 1"x48" A-588
BOT. FLANGE ~~2½"x66"~~ A-588 2¾"x66"
WEB PL'S ~~⅝"~~ A-588 2¾"
EXISTING SPLICE
5'-0"
P.C.
R=44'-2¾"
GRIND
SECTION C-C
SECTION C'-C' SIMILAR
1½"=1'-0"
A3
8'-11⅛" (HORIZONTAL)
½"ø THREADED STUD 6"%
⅜" PLATE
13'-8¼"
℄ RELOCATED ARCH SPLICE
DETAIL AT PANEL POINT 3
⅜"=1'-0"
L 3½"x3½"x⅜" (TOP & BOT. OF ⅜" PL)
E SPLICE 5'-0"
R=72"
℄ ARCH
TYP.
2¼"x45" A-588 PL
SECTION B-B
⅜"=1'-0"
OUTLINE OF WALKWAY ⅝" FLOOR PLATE - CLIP TO STIFFENER FLANGES (SEE DETAIL '1')
℄ STIFFENER
R=12'-0"
EXIST. L 4"x4"x⅜"
FOR LADDER DETAILS SEE SHOP DWG. NO. K3513-102<D
¼"x3" STIFF. PL
SYMMETRICAL ABOUT ℄ GIRDER
R=72"
MANHOLE COVER IN WALKWAY - REUSE EXIST. M.H. COVER AT ARCH MANHOLE
SECTION D-D
⅜"=1'-0"
SECTION A-A
⅜"=1'-0"

5-1-72 Corrections as per PBQ&D. Change bottom flange to 2¾"

MEASURED HORIZONTALLY ALONG WORK LINE OF GIRDER

SLOPE

EXIST. STIFF. & AT GIRDER SPLICE

EXIST. SPLICE

(WORK LINE OF GIRDER

8'-5" MEASURED NORMAL TO GIRDER WORK LINE

3'-5" — 2"

4'-0"

2'-0"

3½"

E

E'

C

C'

A

B

⅜" CLOSURE PLATE

MARCH WORK LINE

like

½" FILL PLATE FOR EXISTING MANHOLE. MODIFY EXISTING DETAIL AS SHOWN.

CUT STIFFENER TO CLEAR ANGLE

TYP. 5/16 × 6 × 3¼

2-PL 5/8 × 11"

1'-3 5/8"

1-1 1/2" PL.

TYP. TIGHT FIT

MILL TO BEAR

2-1" Ø H.S.

L 8×8×9/16

SECTION E'-E'

SECTION E-E SIMILAR

⅜"=1'-0"

TYP. 5/16

4'-0"

SECTION F-F

⅜"=1'-0"

FLOOR PL.

5/8"×2" (TYP.)

1¼" Ø BOLT

DETAIL 1

1"=1'-0"

1'-6" E SPLICE TYP.

TYP. 6" (TYP.)

(M.P. 100%) TYP. ½

2 PL ½"×8" (TYP.)

2 PLS 5/8"×8" (TYP.)

STIFF. PL. ⅜"×8" A588 (TYP.)

PL 1"×10" (TYP.)

PL ½"×8" (TYP.)

2-½" PLS (TYP.)

TIGHT FIT WALKWAY

TYP.

4'-0" C.C. SPLICES

2'-0"

2 SPLICE PLS 1⅛"×40" A514 (TYP.)

1 FILL PL ½"×40" A514 TOP

1 FILL PL ¾"×40" A514 BOT.

2'-1" 2'-1"

4'-2"

SECTION G-G

⅜"=1'-0"

¾" FILL PL. (TYP.)

MILL TO BEAR

2-L's 4×4×⅜" (TYP.)

½" PLATE

EXIST. ½" GUSSET PLATE (TYP.)

PROVIDE 2 NEW LS 4×4 TO PERMIT REVISION OF CONNECTION

1¾" FILL PLATE (T

SECTION H-H

⅜"=1'-0"

NOTE: DETAILS SHOWN ARE SIMILAR FOR SECTIONS F-F, H-H, AND J-J.

4'-0"

3'-10"

1'-11"

1 SPLICE PL 1⅛"×41" L.S. A514 (EXIST.)

1 SPLICE PL 1⅛"×42" O.S. A514 (EXIST.)

1 FILL PL. 4×4" L.S. A514

1 FILL PL. 1"×42" O.S. A514

TYPICAL

FLANGE PL. 3¼"×8" A-588 (TYP.)

FLANGE PL 3¼" A-588

SPL. PL 2⅛×7 N.S.

SPL. PL 2⅛×7 F.S.

SPL. PL 46×2⅛" N.S. (EXIST.)

SPL. PL 46×2⅛" F.S.

SEE SHOP DWG. K3513-206 AD FOR SPLICE BOLTING

A

4'-0"

2'-0"

MILL TO BEAR

½" PLATE

MILL TO BEAR

CUT 1½" ½ TYP. BOT. PL.

¾

4'-2"

¾

SECTION J-J

⅜"=1'-0"

FOR INFORMATION ONLY

ADVANCE PRINT

DATA SHOWN ON THIS DRAWING IS UNOFFICIAL AND ARE SUBJECT TO CHECKING AND APPROVAL

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

NOTES:

1. FOR GENERAL NOTES SEE SHEET 3.
2. FOR DETAILS NOT SHOWN SEE SHEET 15.
3. ALL STEEL ASTM-A36 UNLESS NOTED.
4. ALL FIELD CONNECTIONS SHOWN ON THIS SHEET ARE TO BE 1" Ø A-325 UNLESS NO
5. ALL FILLET WELDS ⅜" UNLESS NOTED.
6. FOR STRUCTURAL STEEL NOTES SEE SHEET
7. FOR GIRDER FRAMING SEE SHEETS 3
8. RADIOGRAPHIC INSPECTION IS REQUIRED FOR 100% OF THE INDICATED GIRD WEB LONGITUDINAL BUTT WELD.
9. WELD QUALITY FOR ALL GIRDER WEB BU WELDS SHALL BE AS REQUIRED FOR B WELDS IN TENSION FLANGES.
10. (M.P. 100%) DENOTES 100% MAGNETIC PART INSPECTION. BALANCE OF FILLET WELDS HAVE AT LEAST 10% MAGNETIC PARTICLE INSPECTION.
11. PROVIDE LOCK NUTS & WASHERS FOR ½" Ø & THREADED STUDS.

APPROVED:

BRIDGE ENGINEER

ASST. STATE HIGHWAY ENGINEER

STATE HIGHWAY ENGINEER

DESIGNED CHECKED

DRAWN CALC. BOOK

OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

FREMONT BRIDGE
STADIUM FREEWAY
MULTNOMAH COUNTY

DETAILS OF PANEL POINT B

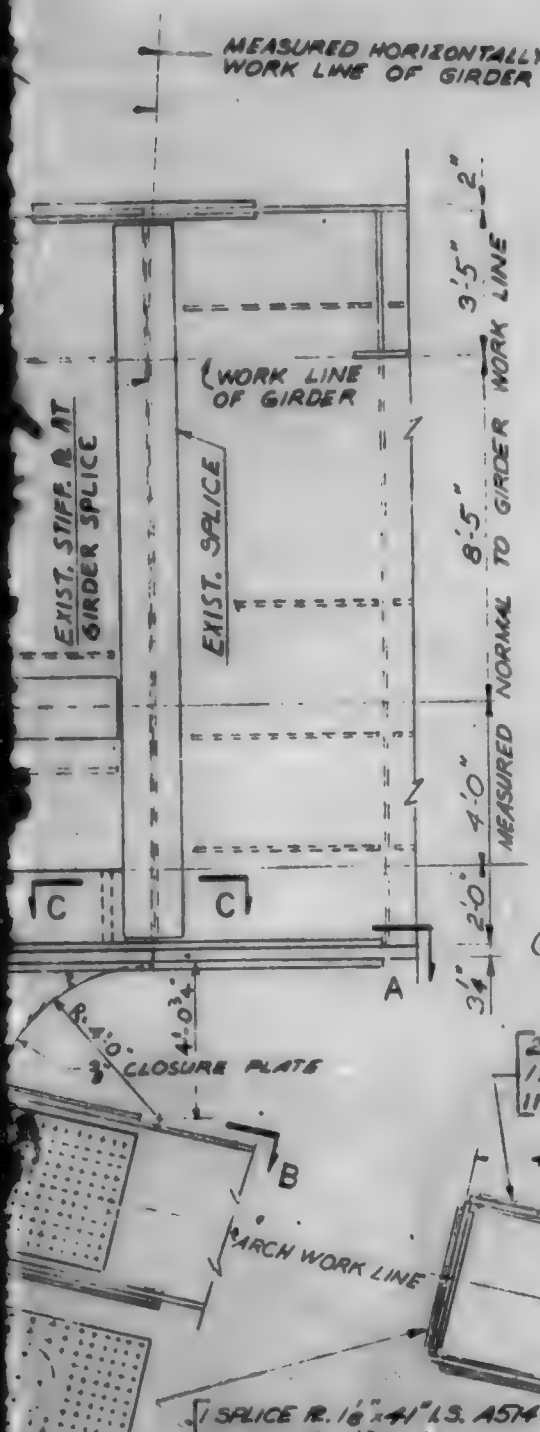
DATE BRIDGE NO. 2529

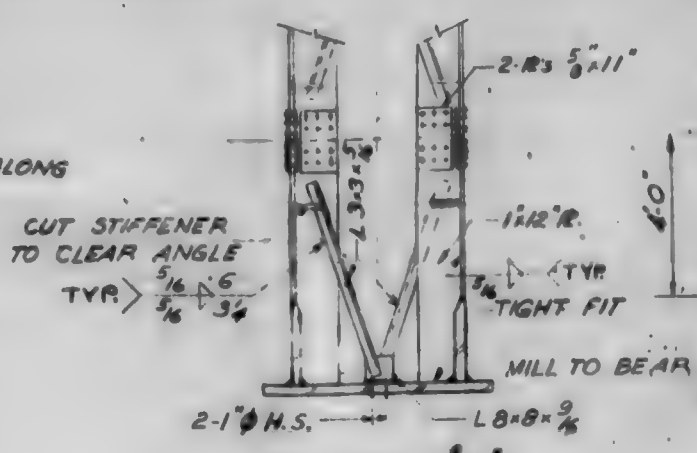
ACCOMPANIED BY DWGS.

SHEET 1 OF

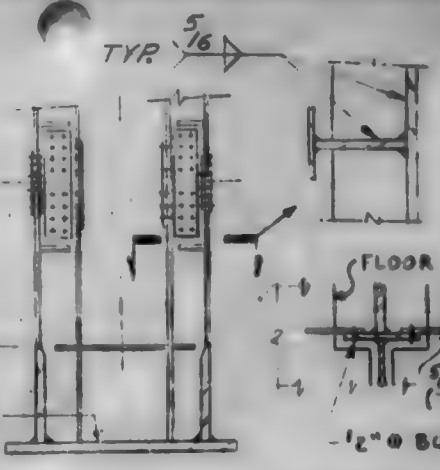
DRAWING NO.

2¾" and thickened web PL to 2¾". Filler PL thicknesses @ field splices to be adjusted ac

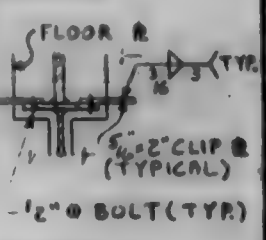




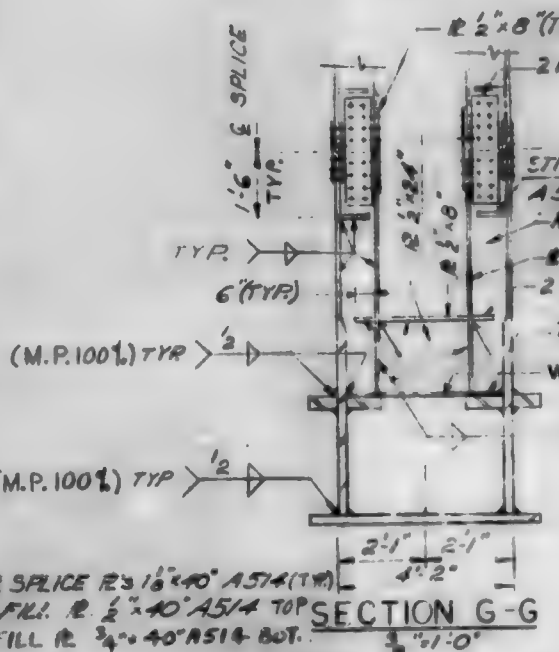
SECTION E'-E'
~~SECTION E'E' SIMILAR~~
3/8"=1'-0"



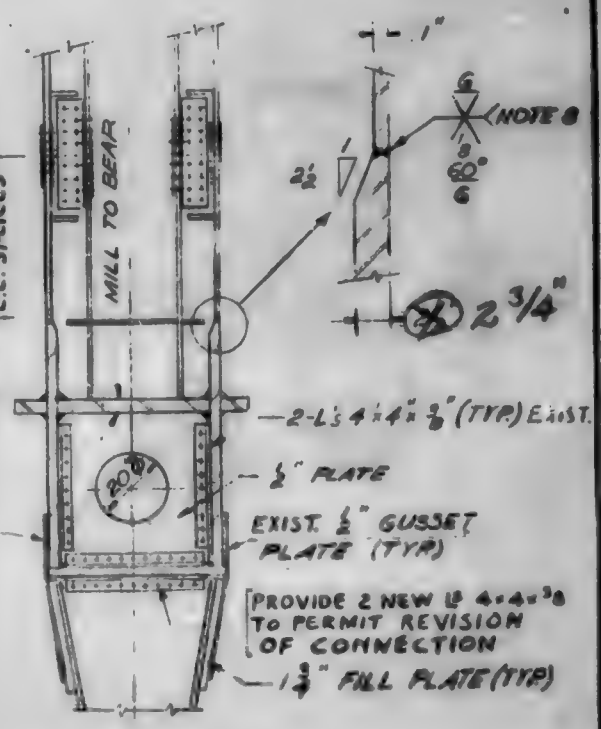
SECTION F-F
3/8"=1'-0"



DETAIL 1
1"=1'-0"



SECTION G-G
3/8"=1'-0"


MILL TO BEAR
2-L's 4"x4"x3/8" (TYP.) EXIST.
1/2" PLATE
EXIST. 1/2" GUSSET PLATE (TYP.)
3/4" FILL PL. (TYP.)
PROVIDE 2 NEW L's 4"x4"x3/8 TO PERMIT REVISION OF CONNECTION
1 3/4" FILL PLATE (TYP.)

SECTION H-H
3/8"=1'-0"

2 SPLICE ℝ's 1/8"x40" A514 (TYP.)
1 FILL ℝ. 1/2"x40" A514 TOP
1 FILL ℝ. 3/4"x40" A514 BOT.

NOTE: DETAILS SHOWN ARE SIMILAR FOR SECTIONS F-F, H-H, AND J-J.

1 SPLICE ℝ. 1/8"x41" L.S. A514 (EXIST.)
1 SPLICE ℝ 1/8"x42" O.S. A514 (EXIST.)
1 FILL ℝ. 4"x41" L.S. A514
1 FILL ℝ. 1"x42" O.S. A514
TYPICAL

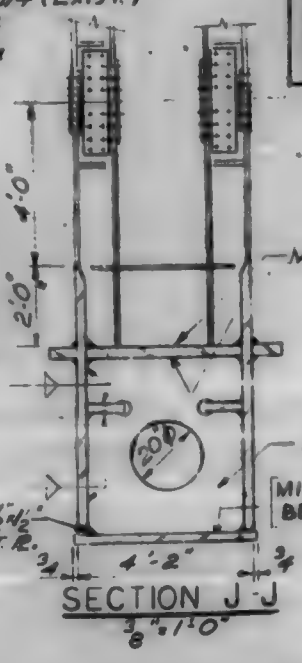
LL PLATE FOR EXISTING OLE. MODIFY EXISTING AS SHOWN

"x6" A-588 (TYP.)
ℝ 3/4" A-588

SPL. ℝ 2'8-7 N.S.
SPL. ℝ 2'8-7 F.S.

ℝ 46-2 1/2" N.S. (EXIST.)
ℝ 46-2 1/2" F.S.

SEE SHOP DWG. K3513-206AD FOR SPLICE BOLTING



SECTION J-J
3/8"=1'-0"

FOR INFORMATION ONLY

ADVANCE PRINT
DATA SHOWN ON THIS DRAWING IS UNOFFICIAL AND ARE SUBJECT TO CHECKING AND APPROVAL
PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

NOTES:

1. FOR GENERAL NOTES SEE SHEET 3.
2. FOR DETAILS NOT SHOWN SEE SHEET 15.
3. ALL STEEL ASTM-A36 UNLESS NOTED.
4. ALL FIELD CONNECTIONS SHOWN ON THIS SHEET ARE TO BE 1"ø A325 UNLESS NOTED.
5. ALL FILLET WELDS 5/16" UNLESS NOTED.
6. FOR STRUCTURAL STEEL NOTES SEE SHEET 16.
7. FOR GIRDER FRAMING SEE SHEETS 31 & 32.
8. RADIOGRAPHIC INSPECTION IS REQUIRED FOR 100% OF THE INDICATED GIRDER WEB LONGITUDINAL BUTT WELD.
9. WELD QUALITY - FOR ALL GIRDER WEB BUTT WELDS SHALL BE AS REQUIRED FOR BUTT WELDS IN TENSION FLANGES.
10. (M.P. 100%) DENOTES 100% MAGNETIC PARTICLE INSPECTION. BALANCE OF FILLET WELDS TO HAVE AT LEAST 10% MAGNETIC PARTICLE INSPECTION.
11. PROVIDE LOCK NUTS & WASHERS FOR 1/2" ø BOLTS & THREADED STUDS.

NOV 21 1962

APPROVED:
BRIDGE ENGINEER
ASST. STATE HIGHWAY ENGINEER
STATE HIGHWAY ENGINEER
DESIGNED ... CHECKED ...
DRAWN ... CALC. BOOK ...

OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

FREMONT BRIDGE
STADIUM FREEWAY
MULTNOMAH COUNTY

DETAILS OF PANEL POINT 3

DATE ... BRIDGE NO. 2529
ACCOMPANIED BY DWGS. ...
SHEET 1 OF 1
DRAWING NO. ...

and thickened web ℝ to 2 3/4". Filler ℝ thicknesses @ Field splices to be adjusted accordingly

RECEIVED
MAY 8 - 1972
FOR FILING

Glen. Dills

OREGON STATE HIGHWAY DIVISION
INTER-DEPARTMENT CORRESPONDENCE
Salem, Oregon

DATE May 4, 1972

TO Mr. John Jenkins
Engineer of Materials and Research
LABORATORY

7276

FROM ORIGINAL SIGNED
WALTER J. HART
Walter J. Hart
Bridge Engineer

SUBJECT Inspection of Fabrication
Revised Panel Point 3
Fremont Bridge
Contract 7276

Murphy Pacific Corp. has indicated that the fabrication of the new Panel Point 3 sections will be done by American Bridge at their South San Francisco Bay facilities. It is suggested that you contact the Materials Section of the California Highway Division in an effort to secure their services in the inspection of this work. A close liaison between the California inspection personnel and our department should be maintained during the fabrication of these sections.

I would suggest that Ed Rief be designated as our contact with the California inspection personnel. Mr. Rief should plan to make periodic trips to the fabrication plant in order that the department may be assured that the inspection procedures are being followed in keeping with our normal practice.

Murphy Pacific has indicated a tentative schedule of fabrication commencing mid-June, 1972, and completing mid-September, 1972.

WJH:dh

cc Tom Edwards
A. E. Johnson
H. S. Coulter
R. O. Cunningham
H. A. Schell

NOTED
A. E. JOHNSON

RECEIVED
MAY 5 1972
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAY 3 - 1972
FOR FILING
7276

Gen. Files

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

DATE May 3, 1972

TO Mr. Leonard I. Lindas
Chief Counsel
B U I L D I N G
Attn. Jack Sollis

FROM Walter J. Hart
Bridge Engineer

SUBJECT Fremont Bridge Section
Stadium Freeway
Contract 7276
Impaired Railroad Clearance for Falsework

Attached are four copies of an application for impaired clearance on the Portland Terminal Railroad Company tracks as required for falsework necessary to the construction of the subject structure. This is falsework which is required in connection with repair of the cracked girder.

Also enclosed are four sets of the drawings which indicate the impairment.

This impairment has verbal approval of the Portland Terminal Railroad Company.

I have reviewed the application with Mr. Lon Topaz of the PUC office and he has given tentative approval to the form and contents. The permit is needed to allow commencement of work and Mr. Topaz has indicated that he will give it priority treatment if it is submitted to his attention.

RWE:dh
Attachments

cc A. E. Johnson
T. W. Litchfield

NOTED
A. E. JOHNSON

RECEIVED
MAY 3 1972
OFFICE OF
STATE HIGHWAY ENGINEER

FORM NO. ONE

BEFORE THE PUBLIC UTILITY COMMISSIONER

OF OREGON

In the Matter of the Application of)
State of Oregon)
for a variance from the provisions)
for standard clearances as set out)
in Rules and Regulations of the)
Public Utility Commissioner of)
Oregon, Div. IV, Sub. 4)

1. The name and the address of applicant are State of Oregon by and through its Highway Commission, Salem, Oregon and said Applicant is engaged in the business of highway construction and maintenance.

2. Applicant requests authority to temporarily impair standard clearances as set out in the above Rules and Regulations for a falsework structure located at Fremont Bridge, centerline station approximately 366+04.50 on the west side of the Willamette River in Portland, Oregon.

3. The impairment of clearances will be as follows:

A falsework structure which is approximately 7 feet 11 inches from centerline of track, thus impairing the standard horizontal clearance to the extent of 7 inches throughout the approximately 4 foot length of the structure.

4. The details of the impairments are more particularly shown on sketch accompanying application and by this reference made a part hereof.

5. The needs for such impairments are as follows: Falsework structure required to allow construction of the Fremont Bridge. Impairment will be for a duration of approximately 9 months.

6. The owner of track is Portland Terminal Railroad Company, which track will be operated by Portland Terminal Railroad Company.

7. The average number of train movements per day are 185, at the approximate speed of 10 miles per hour. These movements are during daylight hours and hours of darkness.

8. For the protection of train and engine crews, it is proposed to install and to illuminate, if necessary during the hours of darkness, 2 standard design signs bearing the words, "IMPAIRED CLEARANCE", in black letters at least three inches high on a white background, to be located at both sides of the impairment.

9. All costs of the impaired clearance signs, signals or other protective devices that are found to be necessary, and their installation, maintenance and illumination, will be paid for by Applicant.

The track to be impaired is a through track.

WHEREFORE, Applicant prays for an order authorizing the variance from the standard clearances as is set out herein, or for such other orders as may be proper in the premises.

Dated this _____day of_____, 19___.

State of Oregon - Highway Division
Name of Applicant

Verification

_____
Walter J. Hart
Bridge Engineer

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MURPHY PACIFIC ENTERPRISES

4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

7276

May 2, 1972

cy Hall Ward
H. J. Coulter
R. O. Cunningham
5-12-72

American Bridge
Division of United States
Steel Corporation
600 Grant Street
Pittsburgh, Pennsylvania 15230

Attention Mr. Walter Schielke
Vice President, Contracting

NOTED
A. E. JOHNSON

Subject Fremont Bridge
OSH Contract No. 7276

Gentlemen:

This will serve to confirm our telephone communication of this date and discussions during the past several weeks between representatives of ABD and MPE.

We have been directed by the State of Oregon to furnish and erect four modified tie girders at P.P. 3 in lieu of existing pieces marked $205G1^{R}$, $205G1^{L}$, $205G2^{R}$ and $205G2^{L}$ under change order to our existing contract. Due to your demonstrated ability to detail, procure material and fabricate under your existing material contract for the subject work we are requesting you to provide the aforementioned pieces.

An advanced print covering details of P.P. 3, dated April 21, 1972, and prepared by Parsons, Brinckerhoff, Quade and Douglas has been forwarded to your Maywood drafting room. Further and final circled revisions to this print were forwarded to Maywood on Monday, May 1, 1972.

NOTED
TOM EDWARDS

TELEPHONE (415) 653-1717 . CABLE 'MYPAC' . MAILING ADDRESS P.O. BOX 23007, OAKLAND, CALIFORNIA 94623

Time is of the essence of this work as field erection now faces a two month delay awaiting delivery of these pieces. We, therefore, authorize you to procure material at the most readily available source and schedule fabrication operations for the earliest possible delivery.

It is requested that your quotation and firm delivery schedule reflecting the above conditions be in our hands no later than close of business Tuesday, May 9, 1972.

It is anticipated that this work will be performed at your South City works and that inspection on behalf of the State of Oregon will be accomplished by Pittsburgh Testing Laboratories.

Very truly yours,

MURPHY PACIFIC ENTERPRISES

Jay P. Murphy
Project Sponsor

JPM:nl

c.c. Mr. T. Edwards
State Highway Engineer
Mr. L. Silano
Parsons, Brinckerhoff, Quade & Douglas
Project Engineer
Mr. A. Kostelic
General Insurance Company
Surety

RECEIVED
MAY 4 1972
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
APR 26 1972

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OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

DATE April 24, 1972

TO Memo to the Files

7276

FROM R. J. Wright

R. J. Wright
Bridge Office Engineer

SUBJECT Impact Test Requirements
Fremont Bridge Superstructure
Contract 7276

The following is a review of the inclusion of the Charpy V-notch Impact Test requirements for A588 structural steel in the special provisions for the subject project.

The Bridge Section file contained information as follows:

A. Final draft of the original submission of specifications was dated November 15, 1968, and did not contain any reference to impact tests.

B. Correspondence between the consulting engineers, PBQ & D, OSHD, and FHWA did not mention impact testing until letters referred to in C below were received.

C. The second submission of specifications, together with the plans, was transmitted by the consultants to Mr. I. D. Merchant on February 14, 1969. A letter of explanation of the changed items, dated February 26, 1969, from the consultants gave references and reasons why impact test requirements should be included in the specifications. Impact test requirements for informational purposes only were outlined in accordance with BPR Circular Memorandum of August 4, 1966, subject, "Use of Modified ASTM A441 Steel on Federal-aid Projects". A supplementary requirement concerning impact properties of ASTM A588 steel was taken from the "Proposed AASHO Material Specifications for Steel Conforming to ASTM Designation A588-68".

D. The final version of contract special provisions is the same as set forth in C above.

NOTED
A. E. JOHNSON

From telephone conversations with I. D. Merchant April 20, 1972, and H. A. Schell April 24, 1972:

Both indicated that the FHWA had insisted that impact test requirements be made a part of the special provisions, and that this was probably accomplished by telephone in conversations between the consultants and either the Oregon Division office of the FHWA or the Washington, D.C. office.

Summary:

Bridge Section files indicate that Charpy V-notch Impact Test requirements for A588 steel for informational purposes only were not a part of the original submission of the special provisions. The requirements were made a part of the specifications at a later date but there is no record in the file to indicate on whose recommendation. The consultant was probably told to include the impact requirements by theWashington, D.C. office of the FHWA.

RJW:dh

cc A. E. Johnson

RECEIVED
APR 25 1972
OFFICE OF
STATE HIGHWAY ENGINEER

cc: Mr. Simpson, Div Eng
Oregon Division, FHW

FOR FILE

7276

Room 314, Mohawk Building
222 S.W. Morrison Street
Portland, Oregon 97204

April 20, 1972

RECEIVED
APR 24 1972
OFFICE OF
STATE HIGHWAY ENGINEER

BY SENT STATE 11-21-72

Mr. Alan Carlson
234 S.E. 15th
Portland, Oregon 97214

Dear Mr. Carlson:

With reference to your letter of April 7, 1972, one of the main support beams on the west span of the Fremont Bridge did crack during erection. Several studies have been made to determine the cause and come up with recommendations on what repairs should be made. These studies were made by the original design consultant and by two other consulting firms engaged by the Oregon State Highway Department after the crack occurred. The State has now received reports from the consultants and are presently negotiating with the contractor for the accomplishment of repairs. Cost of repairs and responsibility for these costs are still under negotiation.

If you wish additional information, we suggest you contact the State Highway Department since they are administering the contract.

Very truly yours,

NOTED
F. E. KLAER

Roy Tokerud, Chief
Bridge Division

cc: Oregon Division
FHWA, Mr. Simpson

RECEIVED
APR 27 1972
OREGON DIVISION

NOTED
TOM EDWARDS

Act	Inf	
	✓	Div Eng
	✓	Eng Coor
		Dist A
		Dist F
	✓	Bridge
		Planning
		Rt of Way
		Admin Mgr
		File

Alan Carlson
234S.E. 15th
Portland, Ore.

April 7th, 1972

Dear Sir,

I have been told that the Fremont Bridge has develeped a foot and a half crack in the south west ramp. How and why did this accident happen? I was also told that it may not be repairable, and that the entire structure may have to be torn down as a result of the crack. Is this so? If it is how much will this cost the tax payers, and how long will it teke to finish the job?

Sincerely,

Alan Carlson

Alan Carlson

RECEIVED
APR 20 1972

FORM FHWA-121 (12-67)

UNITED STATES GOVERNMENT

FOR FI

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

7276

TO : Mr. George M. Baldwin, Administrator of Highways
Salem, Oregon
Attention: A. E. Johnson

DATE: April 17, 1972

In reply refer to: 10-35.6

FROM for R. E. Simpson, Division Engineer
Salem, Oregon

cy Hartwell
W. J. Cowles
R.O. Cunningham
4-20-72

SUBJECT: Oregon I-405-8(17)303
Revisions to Panel Point 3

The following comments were received from our Washington office on the repair of the arch connection to the girder:

1. If the thickened portion of the 2½ inch web plate was turned outward instead of inward it would be possible to install the existing arch rib between the gusset plates. This would utilize approximately 6 foot 8 7/8 inches of additional arch rib and eliminate the necessity of a separate arch splice.

2. The bottom flange plate 2½ inches by 66 inches was proposed as 3 inch thickness by HNTB. Similarily the 2½ inch by 45 inch plate in Section B-B was proposed at 2½ inches by HNTB.

3. The taper in Section D-D should be modified to provide a more gradual transition.

4. Fill plates will be required between the gusset plate and the hanger at panel point 3.

Please have your consultant consider these suggestions in their preparation of plans.

RECEIVED
APR 18 1972
OFFICE OF
STATE HIGHWAY ENGINEER

4-18-72
REFERRED TO
al
BY DEPUTY STATE

NOTED
A.E. JOHNSON

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

GPO 917-344

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APR 20 1972
FOR FILING

Gen. Files

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

DATE April 17, 1972

TO Memo to the Files

7276

FROM ORIGINAL SIGNED
WALTER J. HART

Walter J. Hart
Bridge Engineer

SUBJECT Revised Panel Point 3 Details
Fremont Bridge

At 2:20 pm on April 17, 1972, a telephone call was received from Mr. R. O. Cunningham, Resident Bridge Engineer on the subject project, relating a discussion which he had with a representative of the contractor. The contractor indicated that Richardson-Gordon & Associates, the consulting firm which had been engaged by the contractor, has reviewed the April 7, 1972, preliminary prints for the revised Panel Point 3 detail and have made the following comments:

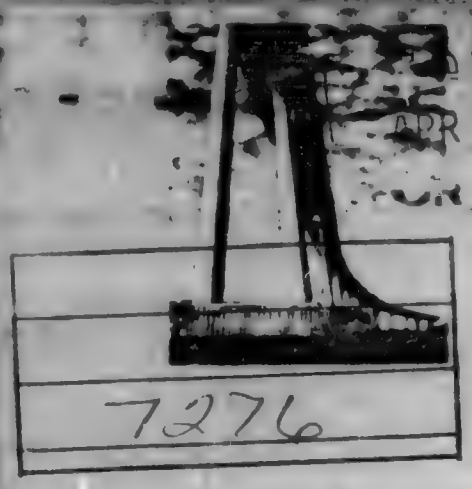
That with the two-foot radius on the web junction section at the arch splice, a stress of 38,000 psi is predicted. This stress was caused in a large part by the stress riser effect. Richardson-Gordon & Associates indicate that if the radius can be increased to four feet the stress would be reduced to 29,000 psi. Richardson-Gordon & Associates are also concerned with lowering of the falsework at Panel Point 3 and putting the curved area of the bottom flange in tension.

MJH:dh

cc Tom Edwards
A. E. Johnson
H. S. Coulter
H. A. Schell, Jr.

NOTED
A. E. JOHNSON

RECEIVED
APR 19 1972
OFFICE OF
STATE HIGHWAY ENGINEER



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APR 18 1972
FOR FILING

7276

MURPHY PACIFIC ENTERPRISES

4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

Oregon State Highway Division
5821 N.E. Glisan
Portland, Oregon 97213

April 11, 1972

Attention: Mr. R.O. Cunningham
Resident Engineer

Gentlemen:

Contract No. 7276
Fremont Bridge

This date we delivered to you three prints each of the following modification drawings:

720501-1 West Side Span - Section 4G Replacement General, dated 3-27-72

720501 2 Falsework Tower 3W, Elevation and Details, dated 4-6-72

720501-3 Falsework Tower 3W, Structural Details, dated 4-6-72

These drawings have been prepared by Earl and Wright and are submitted for your review and approval.

At your convenience we would like your comments, and should you wish us to proceed with the procurement of material and fabrication, please issue an appropriate directive.

All of the works covered by these drawings are an addition to our present contract.

Metro
B. Ago
AE Johnson
Edwards

RECEIVED
APR 19 1972
Resident Bridge Engineer

Very truly yours,

Murphy Pacific Enterprises

Alpo J. Tokola

Alpo J. Tokola
Project Manager

NOTED
TOM EDWARDS

cc: J. Murphy

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APR 1
FOR FIL

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

7276

TO : Mr. George M. Baldwin, Administrator of Highways
Salem, Oregon

DATE: April 5, 1972

In reply refer to: 10-35.6

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(17)307
Repair of Fremont Bridge Fracture

cy - Hall Hart
H. J. Coulter
R. O. Cunningham
4-12-72

We approve your proposal to proceed with replacement of the tie girder-arch junction sections of both the east and west backspans with a detail based on HNTB preliminary sketch S-1.

Of the several alternates prepared by the consultants, our Washington and Regional offices concur that a detail similar to sketch S-1 should be used for repair. The modification suggested by our Washington office FHWA sketch dated March 22, 1972 should be considered by the consultants in preparation of details. Final details should be submitted for approval.

4-10-72
Johnson

NOTED
A. E. JOHNSON

RECEIVED
APR 7 1972
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
TOM EDWARDS

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

GPO 917-344

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

2045-X102

ENGINEERS

March 31, 1972

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Panel Point 3

Dear Walter:

As discussed with you and Al Johnson on Monday, March 27, 1972, we are enclosing one (1) print of our drawing, "Details at Panel Point 3," which represents our progress as of Thursday, March 30, 1972. We have tentatively proportioned and sectioned up the girder-rib section to satisfy the forces determined from the computer runs. The plate thickness will be determined or verified based on the results of the finite element analysis which we have started working on now that the member has been sectioned.

You will note, that this scheme requires some modification or shortening of the arch-rib where it joins the girder. To avoid this, we have given considerable thought to treating this connection similar to a truss wherein the girder-web would act similar to gussets and frame outside and over the webs of the arch rib. This would be desirable since it would not require modifications to the arch-rib.

Yesterday, you indicated that the Federal Highway Administration had suggested that we maintain the in-to-in of girder-webs at 48 inches and let the thickened (2½ inch) girder-web protrude on the exposed side. This is what we had contemplated and would require if we were to treat the girder-webs as a gusset to permit framing the arch-rib between these webs. While it has advantages, it has problems associated with it which cannot be overlooked.

NOTED
A. E. JOHNSON

When we considered this approach, we were concerned about tolerances and accuracy of fabrication. The girder-webs are separated at this location by a 2½" thick plate to which would be bolted the top flange of the arch-rib. This plate permits the transfer of the stress from the top flange of the rib to the girder-web plates. The width of this plate therefore controls the distance in-to-in of girder-webs. To permit entrance of the arch-rib for bolting-up the connection, the width of this plate would have to be accurately set with a minimum of a 1/32 inch over-clearance. Because of the heavy plates, the constraints in this area and distortions in the make-up of the arch-rib member, we have reservations whether these 2½" web plates can be sprung to permit entrance of the rib and more importantly, if the high-strength bolts can effectively draw these plates together, to permit the connection to work in friction.

After you have had time to reflect on this aspect or any of the details shown on this drawing, we would appreciate hearing from you.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano

L. G. Silano
Project Engineer

LGS/rm

Encs.

cc: Tom Edwards, Dep. State Highway Engr. w/enc.
al Johnson, Asst. Highway Engr. w/enc.

RECEIVED
APR 3 1972
OFFICE OF
ENGINEER

RECEIVED
MAR 31 1972
FOR FILING

7276

March 31, 1972

Mr. R. E. Simpson
Division Engineer
Federal Highway Administration
Box 300
Salem, OR 97308

bc/enc. George M. Baldwin
Tom Edwards
F. B. Klaboe
Walt Hart
H. S. Coulter
R. O. Cunningham

Dear Sir:

Fremont Bridge
Contract 7276

The decision has been made to proceed with the replacement of the tie girder-arch junction sections of both the east and west back spans with a detail based on preliminary Sketch S-1 prepared by Howard, Needles, Tammen and Bergendoff. A print of Sketch S-1 is attached. We request your concurrence in proceeding with the repair and replacement of this section with final details based on the preliminary details indicated in Sketch S-1.

Preliminary Sketch S-1 was one of several alternate details prepared by Parsons, Brinckerhoff, Quade and Douglas; Howard, Needles, Tammen and Bergendoff; and the State. It is felt that the detail proposed in Sketch S-1 is the superior of the several alternates considered. Copies of these alternate proposals were previously furnished to you.

On March 21, 1972, the contractor was advised to proceed with preliminary steps towards repair or replacement of the girder sections based on the plan advanced on Sketch S-1.

Very truly yours,

George M. Baldwin
Administrator of Highways

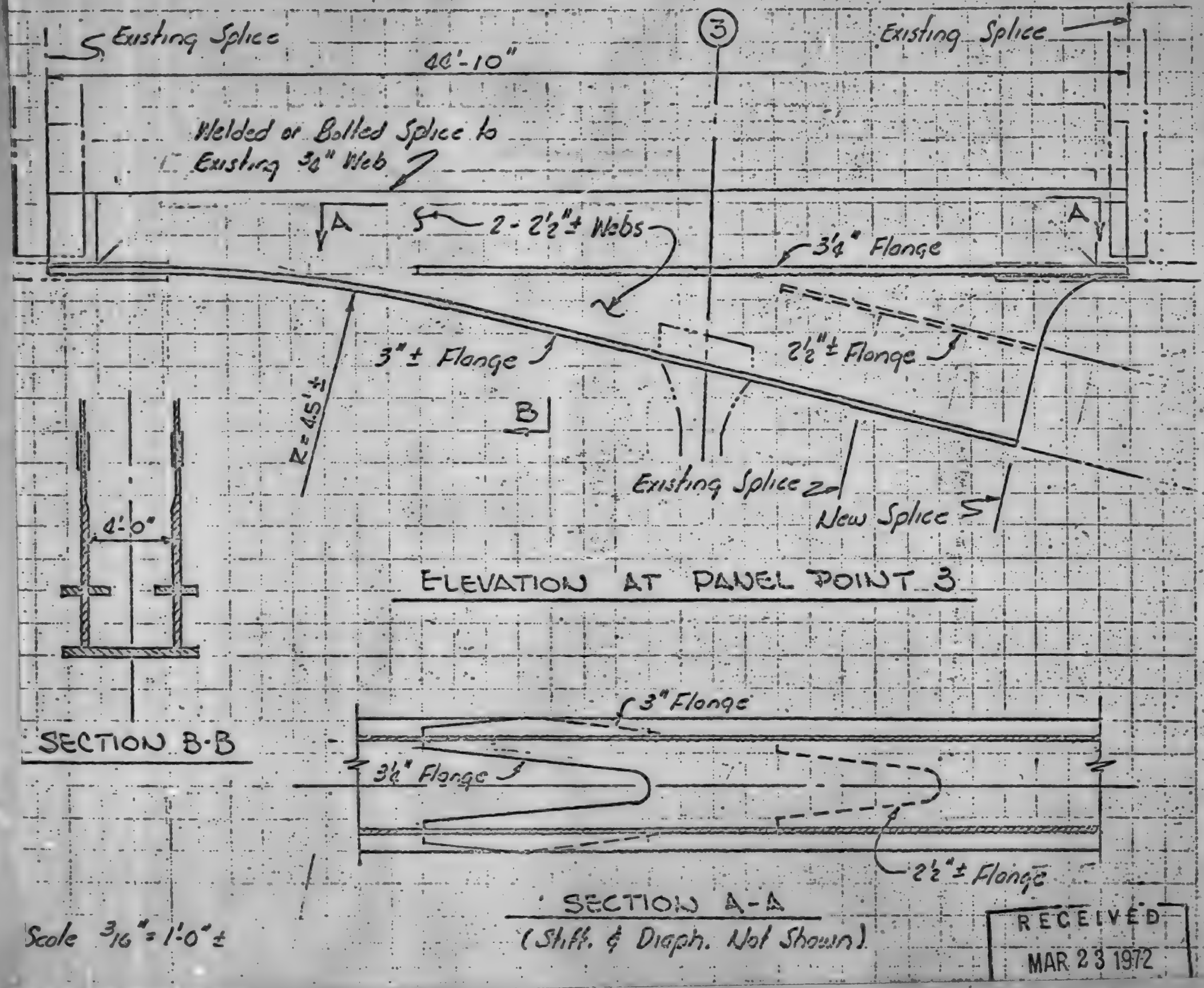
By

A. E. Johnson
Assistant State Highway Engineer

Attachment

WJH:dh ja

O. 6-1162



HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

CALCULATIONS FOR Fremont Bridge - Portland, Oregon

MADE BY RGC DATE 12-7-71
CHECKED BY DATE 3-9-72
JOB NO. 2190.1-11-C
SEC. NO.
SHEET NO. S-1

RECEIVED
MAR 23 1972

Gen. Files

MURPHY PACIFIC ENTERPRISES

4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

March 30, 1972

7276

Oregon State Highway Division
Highway Building
Salem, Oregon 97310

C4 Bridge Contract Correspondence 4-4-72

Attention Mr. Tom Edwards
State Highway Engineer

Gentlemen:

Contract No. 7276
Fremont Bridge

Receipt is acknowledged of your letter dated March 21, 1972 directing us to proceed with any preliminary steps to enable a rapid repair of the four girder sections 4-G for the subject structure per Sketch No. S-1.

We have transmitted this information to American Bridge Division who will be responsible for shop detailing and procurement of materials.

Upon receipt of firm design drawings we will be in a position to negotiate the entire cost of repair as outlined in your letter of March 9, 1972.

As discussed this date, Al Tokola will have preliminary de-erection and erection procedures with respect to 4-G West available the week of April 3, and will be happy to discuss them with you and your staff.

Very truly yours,

MURPHY PACIFIC ENTERPRISES

Jay P. Murphy
Project Sponsor

NOTED
TOM EDWARDS

RECEIVED
APR 3 1972
OFFICE OF
STATE HIGHWAY ENGINEER

JPM:nl

RECEIVED
FOR FILING

Gen. Files

7276

OREGON STATE HIGHWAY DIVISION
INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
March 29, 1972

To: Mr. Walt Hart
Bridge Engineer
OFFICE

SUBJECT: Crack in 205 Unit Girder Rib
Fremont Bridge
Contract #7276

Herewith responses from Mr. Ralph Mikus of PTL to my letters of February 17 and March 21, 1972.

By phone Mr. Mikus told me the "T" shaped gas torch which was mentioned in his letter of March 2, 1972 was what is sometimes known as a "Rosebud" torch. I don't understand where the "T" fits this type of torch.

The radiant gas heater he described as being open flame, similar to the burner in a gas oven, with an air adjustment in the base of the burner.

I still don't get the picture on the heating of the nose portion of the A588/A514 joint, arch rib top flange to tie girder transition piece. If the radiant gas heater is under the tie girder bottom flange, which is up-side-down as the arch rib is being attached, and the torch is being used to heat the upper side of the A514 plate, it hardly seems feasible to use the radiant heater to heat the area between these two plates.

Anyhow, here are your answers, for what they're worth.

JOHN C. JENKINS
Engineer of Materials & Research

JCJ:sb

cc: Tom Edwards
A. E. Johnson
M. S. Coulter
R. O. Cunningham

RECEIVED
MAR 30 1972
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
A. E. JOHNSON

PITTSBURGH TESTING LABORATORY
ESTABLISHED 1881
INSPECTING ENGINEERS AND CHEMISTS
5514 DOYLE STREET
OAKLAND, CALIFORNIA 94608

AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AND AUTHORIZATION FOR PUBLICATION OF STATEMENTS, CONCLUSIONS OR EXTRACTS FROM OR REGARDING OUR REPORTS IS RESERVED PENDING OUR WRITTEN APPROVAL.

March 24, 1972

Oregon State Highway Division
Materials Section
Salem, Oregon 97310

Attention: Mr. John C. Jenkins

Reference: Fremont Bridge
Contract # 7276

Gentlemen:

In reply to your letter of March 21, 1972, we checked the areas concerning your questions and wish to submit the following information.

The joint between the A-514 and A-588 plates was not pre-heated with a torch. Any pre-heating in these areas was also done with the radiant heaters, which were removed as welding commenced.

There was no warping encountered as a result of welding the A-514 plate. Heat straightening was not necessary. The A-514 plate was held in alignment with stiffener braces until welded and then removed.

Very truly yours,

PITTSBURGH TESTING LABORATORY

Ralph F. Mikus, Manager
San Francisco District

RFM:pr
cc: Mr. W. R. Pressler
Mr. D. Scott, Portland Office

RECEIVED
MAR 27 1972
MATERIALS DIVISION
OFFICE

PITTSBURGH TESTING LABORATORY
ESTABLISHED 1[illegible]
INSPECTING ENGINEERS AND CHEMISTS
5514 DOYLE STREET
OAKLAND, CALIFORNIA 94608

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March 2, 1972

Oregon State Highway Department
Materials Section
2950 State Street
Salem, Oregon 97310

Attention: Mr. John Jenkins

Dear Mr. Jenkins:

We have reviewed your letter dated February 17, 1972 and have attempted to answer as many questions as possible.

The "T" shaped (rosebud type) gas torch was used to pre-heat arch rib sections prior to their being welded by an automatic welding process.

The 205 Bottom flange transition pieces, were pre-heated by means of a radiant gas heater four feet in length. One or more of these heaters was placed on the floor below the plates. These heaters burn natural gas. There is a regulator attached to each heater which controls the gas and air flow.

We examined these heaters on March 2, 1972 and no trade name or serial number was visible.

No one here can remember any of the 205 bottom flanges being heated to the point where they started to change color of if overheated in "spot" areas.

Inspectors were equipped with "Tempilstiks" of various melting points and also small circular thermometers which were placed directly on the metal and activated by a spring which contracted or expanded according to the temperature.

NOTED
A. E. JOHNSON

RECEIVED
MAR 6 1972
MATERIALS DIVISION
OFFICE

An examination of inspectors notes and log books was made. No actual temperature readings made during pre-heating of the 205 bottom flanges had been received. However, the temperature was checked with tempilstiks and dial thermometers to determine that the minimum pre-heat temperature was maintained.

Very truly yours,

PITTSBURGH TESTING LABORATORY

Ralph F. Mikus

Ralph F. Mikus, Manager
San Francisco District

RFM:pr

7276 3-22-72 B

DEPARTMENT OF JUSTICE

Memorandum

TO: **DATE:**

FROM:

SUBJECT:

cy mailed 3-22-72

The meeting was called to order by State Highway Engineer Tom Edwards. In attendance were the following:

REPRESENTING OSHD

Tom Edwards, State Highway Engineer
A. E. Johnson, Ass't Highway Engineer
Walter Hart, Bridge Engineer
L. I. Lindas, Ass't Atty General & Counsel
H. S. Coulter, Metro Engineer
Ed L. Hardt, Ass't Metro Engineer
Kamal A. Hamadoli, Design Team Supervisor
James A. Broad, Ass't Res. Bridge Engineer
Jerald E. Backstrand, Design Supervisor
Robt. O. Cunningham, Resident Engineer

REPRESENTING FHWA

W. Jack Wilkes, Chief Bridge Division - Washington
Roy Tokerud, Regional Bridge Engineer - Portland
R. E. Simpson, Division Engineer
H. A. Schell, Division Bridge Engineer - Salem
Robt. B. Rutledge, Regional Counsel
Lyman Lybecker, Dep. Regional Administration

REPRESENTING METALLURGICAL ENGRS. INC., (MEI)

Harry Czyzewski, Consulting Engineers

REPRESENTING HOWARD, NEEDLES, TAMMEN & BERGANDORF (HNTB)

Robt. Crabtree, Chief Designer
Edgar Johnson, Partner

REPRESENTING PARSONS, QUADE, BRINKERHOFF & DOUGLAS (PBQ&D)

Alfred Hedefine, Partner
L. G. Silano, Associate
A. Gursoy, Structural Engineer

COMMENTS OF HARRY CZYZEWSKI:

His conclusions are the same as contained in his written report.

The fracture of the arch member was a brittle fracture.

The A588 steel met ASTM specifications.

Heat affected zone was found in the failing member. This was caused by pre-heating in the weld area.

The fracture started in the area of the metallurgical fault, even tho the steel was within specifications.

The longitudinal direction of the failing member was transverse to the way the steel was rolled. It is less tough transversely than longitudinally. This indicated by Charpy v. notch tests. Brittle.

Temperature at the time of fracture was 35-40° Farenheit.

Laminated cracks appeared in the heat affected zone up to 1/8 of inch deep. Cracks very fine.

Charpy v. notch tests indicated steel broke like cast iron at 0°. (Both longitudinally and transversely)

A588 steel is not homogeneous - occlusions occur in center of block of steel, tho outside appears clean.

Failing member milled from a block including part of occluded area.

Occlusions in steel are normal and permitted by the specifications to the degree present in the steel for this bridge. This could have been eliminated by more stringet specs. Most prohibit.

His opinion, the heat affected zone was heated to 1500-1600° shouldn't have exceeded 500°. Nothing re: this in specs.

HART & KAMADOLI OSHD

Gave result of computations which indicated the failing member was overstressed.

HEDEFINE PBQD

They made finite element analysis at center and not under webs.

Their analysis indicates lower stresses than State's computations.

SELANO PBQD

They reviewed their original stress computations.

They find the structure behavior is in accordance with their computer runs. The computer runs were made by MacDonald-Douglas of St. Louis.

Believe State has been too confining. Their boundary assumptions are too restrictive to reach a proper conclusion.

From their analysis they could not have predicted a failure of the nature that occurred.

CRABTREE HNT&B

No pertinent notes taken.

EDWARDS

We have a failure.

We need to know what caused it.

Something must be done about the joint that failed before the bridge can be completed and people put on it.

EDWARDS TO HEDEFINE PBQ&D

Is it safe to proceed with the joint as now designed?

HEDEFINE

Cannot give an answr if it will be safe to proceed with the designed joint that failed. At least not at this time.

He feels there is something in the elements - which eludes him - in the metallurgical field that may be a contributing factor to the failure. Such things as preheat - welding - many things that are involved make it impossible for him to say we should go ahead with construction at this time.

JOHNSON HNTB

We think many factors affecting the steel took place before the erection that affected the sensitive section involved.

They have no confidence in the plan, as it exists now, to build the bridge as now designed. Because of the sensitivity of the joint involved, it is believed the same should be redesigned.

HEDEFINE PBQ&D

In answer to Simpsons query "if the bridge was erected and ready to be opened, would he now be satisfied with the arch design.

HEDEFINE

In retrospect, this is difficult to answer. If the material was satisfactory - yes - he would be satisfied with the member.

SILANO PBQ&D

You had a failure at a low stress, we question the material.

SIMPSON FHWA

Should be redesigned - should not proceed with the erection of the bridge until this accomplished.

ROY TOHERUD FHWA

Not ready to make statement at this time.

Must study.

Agree with Johnson (HNTB) that there are a number of items to be considered and questioned.

That you can't safely proceed with erection at this time.

WILKES FHWA

Ought to plan at this time to solve the problem.

	Contractor			Owner		
	Mill	Tab	Erect.	Consult.	OSHD	FHWA
Materials						
Specs.						
Design						
Construction						

Use above chart to find part played by all involved.

EDWARDS OSHD

We must have a safe bridge - whatever it takes.

SIMPSON

PBQ&D and HNT&B should make recommendation as to how to redesign the joint.

(NOTE) need to amend HNT&B agreement for this?

HEDEFINE

You already have an alternate design from us.

EDWARDS

I know - I'm not satisfied - I request you look at it again and advise if you want to stay with it.

Discusses three designs OSHD presented - one of which involved a pin connection. Hedefine says this would change all stress conditions. Kamadoli, OSHD, says it would make very little change.

WILKES FHWA

Doesn't favor pin connection.

EDWARDS

Reiterates he wants only a safe bridge.

Not willing to accept the failure due solely to materials.

No faith in joint as now designed.

Not trying to assess liabilities at this time.

CZYZEWSKI (MEI)

He would have expected this particular joint to fail even tho the A588 steel was within specs.

EDWARDS - Re cap

Re: Contractor meeting

1- Metal may have met specs.
2- MEI - Fabrication left something to be desired.
3- Are going to re-design the joint.
4- What method he will use to remove the fractured piece.
5- Removal is up to contractor.
6- Will not attempt to saddle cost of redesign on contractor.
7- Retime extensions. Will relieve liquidated damages from time of failure to time of de-erecting.
8- Contractor to salvage as much of steel as can.
9- Not to discuss matter of standby equip. at this time.
10- Matter of fabrication was choice of contractor.
11- We ok'd consultants design. Our specifications didn't cover matter of having joint run longitudinal to mill rolling.

TOHERUD, WILKES & SIMPSON FHWA

Cannot use joint as now designed.

Agree the joint must be re-designed.

EDWARDS

The fractured piece must be removed.

SIMPSON

Agree:

CUNNINGHAM

Completion will be delayed about 1 1/2 yrs.

SIMPSON

Engineering error involved.

L. I. Lindas

L. I. Lindas
Ass't Atty General and Counsel
Oregon State Highway Division

RECEIVED
MAR 2 1972.
OFFICE OF
STATE HIGHWAY ENGINEER

250
25
132
CO

467 = CONTRACTOR | OWNER

	Mill	Fab	Erector	Consult.	Hwy Dept	Fitch.
① Mtls	5	1		✓ 1 F2	✓ 2 F1	✓ 1
② Fabrication		✓ 5 F2	1	2	2 F1	
③ Specs.				✓ 4	✓ 5	✓ 1
④ Design				✓ 6 F2	✓ 3 F1	✓ 1 F1
⑤ Constr.		1	6	1	2	

Total responsibility = 10

① Brittle (Rolled wrong way); inclusions; Specs wrong.
② Heat affected Zone.
③ Charpy test specs; Failed to note rolling direction.
④ Stress riser; Poor joint (?)
⑤

	(CONTRACTOR)			(OWNER)		
	MILL	FABRICATOR	ERECTOR	CONSULTANT	HIGHWAY.DIV.	F.H.W.A.
MATERIALS						
FABRICATION						
SPECS.						
DESIGN						
CONST.						

COMMENTS:

RECEIVED
FOR FILING

Fin. Files

OREGON STATE
HIGHWAY DEPARTMENT

7276

March 21, 1972

Mr. Ralph Mikus
Manager, San Francisco District
Pittsburgh Testing Laboratory
5514 Doyle Street
Oakland, California 94608

NOTED
A. E. JOHNSON

Re: Fremont Bridge
Contract #7276

Dear Mr. Mikus:

Thankyou for the information furnished in your March 2, 1972 letter regarding the welding preheat used on the Fremont Bridge.

You will recall that I called you on March 8 requesting additional information concerning the method of preheating used when attaching the A514 arch rib top flange to the A588 transition block. You said that the preheat for the A588 side of the joint was provided by placing a four foot long, gas fired, open flame, radiant heater under the bottom flange plate, which was inverted on a work platform. The preheat for the A514 side of the joint was provided by a "T" shaped "rosebud type" gas fired torch heating from above.

I asked if the portable torch had been used to heat the joint from between the A514 and A588 plates. You didn't know and were going to inquire. Do you have an answer at this time?

While talking to you, I brought up another question recently put to me. Since this is a non-symmetrical joint, the weld being made all from one side, I asked if there had been warping necessitating heat straightening to bring the A514 plate into alignment. I believe you indicated that heat straightening was not necessary. Is this correct?

We would appreciate hearing from you on these questions at your earliest convenience.

Very truly yours,

GEORGE M. BALDWIN
Administrator of Highways

By John C. Jenkins

JOHN C. JENKINS
Engineer of Materials & Research

RECEIVED
MAR 22 1972
OFFICE OF
STATE HIGHWAY ENGINEER

cc: Tom Edwards
A. E. Johnson
Walt Hart
M. S. Coulter
R. D. Cunningham
Don Scott
(PTL, Portland)

RECEIVED
MAR 23 1972
FOR FILING

7276

March 21, 1972

Mr. Jay P. Murphy, Project Sponsor
Murphy Pacific Enterprises
Post Office Box 23007
Oakland, CA 94623

Dear Mr. Murphy:

Re: Contract 7276
Fremont Bridge

Please proceed immediately with any preliminary steps you can accomplish toward repairing girder sections 4-6 right and left on both east and west spans, based upon the plan styled 8-1 prepared by Howard, Needles, Tammen & Bergendoff dated 12-7-71, revised 3-8-72. I have this date advised Parsons, Brinckerhoff, Quade & Douglas that this was the selected plan.

I forwarded a sketch of the plan to PEQ&D today and will discuss it with them as soon as they have received it to determine the earliest possible date on which you can expect to receive detailed drawings.

Please advise me of your probable de-erection and erection procedures with respect to sections 4-6 west.

Very truly yours,

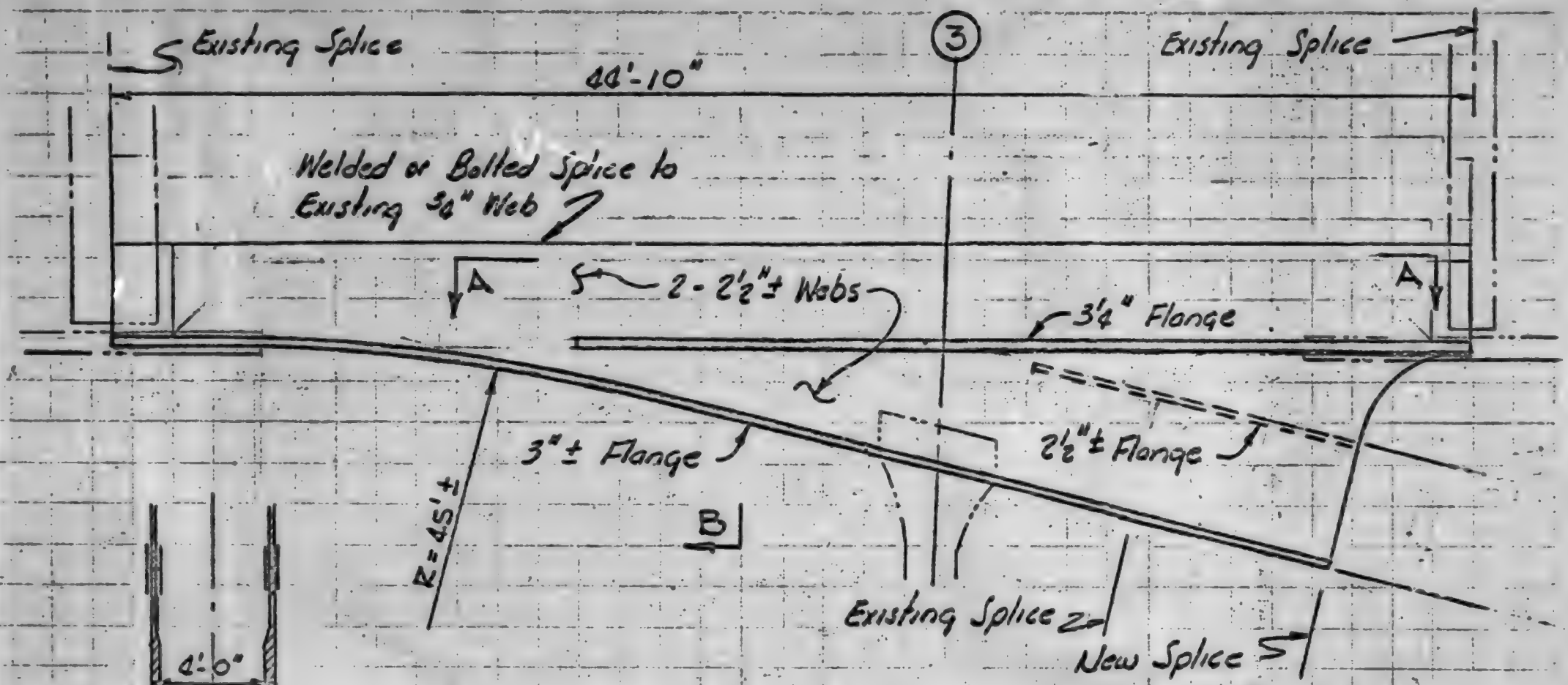
George H. Baldwin
Administrator of Highways

By

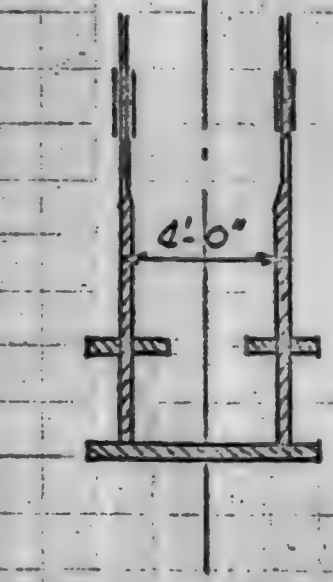
Tom Edwards
State Highway Engineer

TE:ms
Att.
bc/att Al Tobola
Federal Highway Administration
F. B. Klaboe
A. E. Johnson
W. J. Hart
H. S. Coulter
R. L. Cunningham
L. I. Lindas

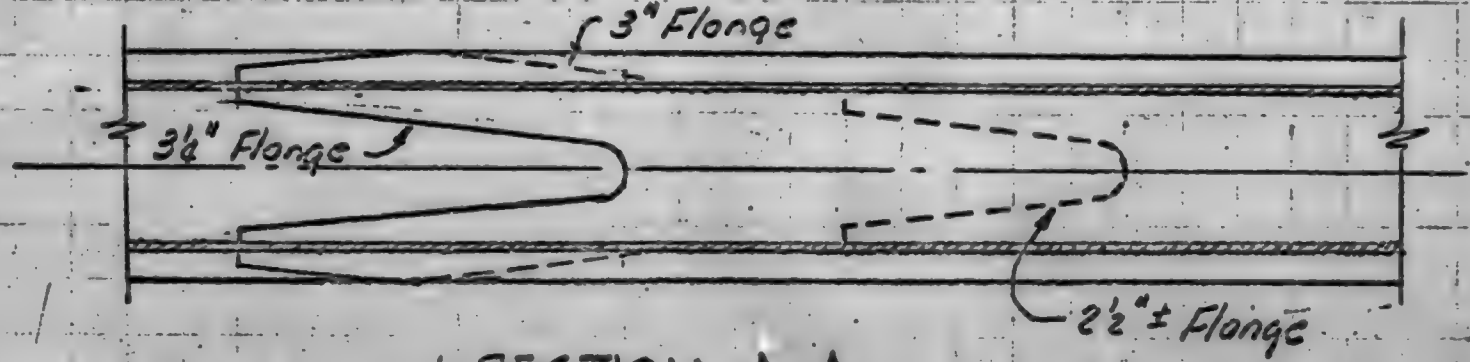
FORM NO. 6-1162



ELEVATION AT PANEL POINT 3



SECTION B-B



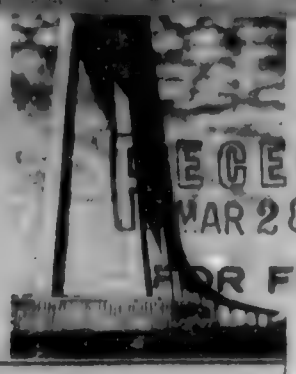
SECTION A-A
(Stiff. & Diaph. Not Shown)

Scale 3/16" = 1'-0"±

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

CALCULATIONS FOR Fremont Bridge - Portland, Oregon

MADE BY RGC DATE 12-7-71
CHECKED BY DATE 5-P-72
JOB NO. 2101-11-C
SEC. NO.
SHEET NO. S-1



RECEIVED
MAR 28 1972
FOR FIL

REFERRED TO
admin
BY SECRETARY

MURPHY PACIFIC ENTERPRISES

4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

7276

March 17, 1972

Oregon State Highway Division
Highway Building
Salem, Oregon 97310

Attention Mr. Floyd Query

Gentlemen:

Fremont Bridge - Contract No. 7276

Receipt is acknowledged as of February 28, 1972 of your letter relative to the extension of contract time on the subject project.

We do not accept your determination of 109 days versus our request of 448 days and did, on March 16, advise the Regional Engineer and the Construction Engineer of this position.

Very truly yours,

MURPHY PACIFIC ENTERPRISES

Jay P. Murphy
Project Sponsor

JPM:nl

NOTED
TOM EDWARDS

RECEIVED
MAR 21 1972
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
STATE HIGHWAY COMMISSION

NOTED
A. E. JOHNSON

NOTED
FLOYD QUERY

TELEPHONE (415) 653-1717 . CABLE 'MYPAC' . MAILING ADDRESS P.O. BOX 23007, OAKLAND, CALIFORNIA 94623

#2

February 25, 1972

Murphy Pacific Enterprises
P. O. Box 12007
Oakland, California 94623

Gentlemen:

The State Highway Commission on February 22, 1972, considered your request for an extension of time of 446 calendar days on Contract No. 7276 for a superstructure on the Fremont Bridge of the Stadium Freeway in Multnomah County.

After considering the availab e facts and the provisions of the Contract the Commission granted an extension of 109 calendar days without assessment of liquidated damages.

If there are pertinent facts which have not yet been considered, you should contact the Resident Engineer, the Regional Engineer, or the Construction Engineer in the Salem Office.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

FQ:hl

bc: F. D. Morgan
Walt Hart
V. E. Skoog
E. S. Coulter
Robert Cunningham
Federal Highway Administration

RECEIVED
MAR 20 1972
FOR FILING
7816

March 17, 1972

Mr. R. E. Simpson
Division Engineer
Federal Highway Administration
P. O. Box 300
Salem, Oregon 97308

Dear Mr. Simpson:

This will acknowledge your letter of March 6 concerning signing on the Stadium Freeway, the Fremont Bridge and its interchanges.

Representatives of our Traffic Engineering Section will be available to discuss this with representatives of your office at 1:30 P.M. on March 28.

Please advise if this time is not satisfactory.

Very truly yours,

George H. Baldwin
Administrator of Highways

By

R. L. Schroeder
Assistant State Highway Engineer

VPJ:sv jf

bc: Tom Edwards
F. B. Klaboe
L. E. George

Form FHWA-121 (7)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

TO : Mr. George M. Baldwin, Administrator of Highways
Salem, Oregon

DATE: March 6, 1972

In reply refer to: 10-35-DA

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Projects I-405-8(17)303 Fremont Superstructure
I-405-8(20)303 West Fremont Interchange
I-405-8(22-24)304 East Fremont Interchange
Stadium Freeway Signing

Several signs on the subject projects are substandard regarding the location of route shields and cardinal direction in accordance with the provisions of the Manual on Uniform Traffic Control Devices. These deficiencies existed under the old manual as well as under the current issue. The signs containing deficient route shield placement are as follows:

West Fremont
Signs No. 8, 9, 10, 11, 12, 13, 16 & 17
East Fremont (Unit "A")
Signs No. 16, 17, 31 & 32
East Fremont (Unit "C")
Signs No. 2, 4 & 5
Fremont Superstructure
Signs No. 1, 2, 4 & 5

Initially some of these signs did not contain a route shield and our memorandum to Mr. Cooper dated February 20, 1969, documented the Federal Highway position in that regard. The reply dated March 5, 1969, indicated that route shields would be added and stated the reasoning used in the initial design. The route shields were then added to the bottom of the signs below the legend with the evident intent to avoid increasing the height of the signs. The results contain significant deficiencies.

We would like to discuss with your engineers at an early date these revisions which can be made in the signing on these projects to conform more appropriately with the UMTCD and other signing in the area. Please advise of a convenient meeting time.

3-10-72
REFERRED TO
BY DEPUTY STATE HIGHWAY ENGINEER

RECEIVED
MAR 7 1972
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
JOM EDWARDS
MAR 13 1972
TRAFFIC ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

NOTED
R. L. SCHROEDER

GPO 917-344

RECEIVED
MAR 21 1972
FOR FILING

7276

Salem
March 17, 1972

Fremont Bridge
Contract No. 7276

V. E. Shoeg
Controller

BUILDING

Delay of construction schedules on the Fremont Bridge brought about by necessary redesign of the joints at Tunnel Point 3 is nearing its end.

Negotiations with the contractor will be undertaken to encompass cost of repairs, time delays, and time extensions into one price agreement.

In the meantime, as an administrative action, it is my order that liquidated damages not be retained from the contractor's estimates.

Tom Edwards
State Highway Engineer

cc Federal Highway Administration

George M. Baldwin
F. B. Klabee
A. E. Johnson
Walter J. Hart
M. S. Coulter
Ed Hardt
R. O. Cunningham
L. I. Lindas

RECEIVED

FOR FILING

7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
March 16, 1972

To: MEMO TO THE FILE

SUBJECT: Fremont Bridge Superstructure
Stadium Freeway
Contract No. 7276

At 2 p.m. this date, a meeting was held in Mr. Edwards' office with Robert Simpson, Roy Tokerud and Herb Schell of the Federal Highway Administration and Scott Coulter, Ed Hardt, Bob Cunningham and I attending.

Mr. Edwards advised the representatives of the Federal Highway Administration of the various design concepts and explained that the contractor preferred the S-1 or the design similar to the Milwaukee Harbor Design. Roy Tokerud indicated a similar preference. Mr. Edwards stated that he felt we will have to pay for the material and labor in the new joint and that at that point our full responsibility would end.

He stated there is some responsibility also with the designers in that the original joint was not considered the best possible; with the steel suppliers since there were weaknesses in the metal; and with the contractor because of heat-affected zones and fabrication. He has advised Murphy Pacific that we want to arrive at one price agreement to encompass all facets, including time extensions, and will negotiate with the contractor when we have a design detail.

Mr. Edwards advised the FHWA people of his promise of suspension of penalty assessments, to which they agreed.

Mr. Simpson was curious as to whether the contractor had indicated an intent to process claims. Mr. Edwards replied that the contractor had told him he would hope to settle everything with one price agreement; that he will build the bridge and, if necessary, resort to court action for settlement.

Roy Tokerud will submit preliminary details to Washington, D.C. for consideration and discuss all facets, and try to determine if there will be any hang-ups at that point.

Mr. Simpson stated he felt that if we switch to Howard, Needles, Tammen and Bergendoff at this time it would provide an "out" for Parsons, Brinckerhoff, Quade and Douglas; that our first attempt should be with PBQ&D and let them be the ones to turn us down, if there is a turndown. Mr. Edwards and Mr. Tokerud agreed.

Mr. Simpson indicated a desire to know how much insurance PBQ&D has and Mr. Edwards will attempt to determine this.

Mr. Simpson also indicated he felt a split of liability will be most difficult to determine and suggested we utilize an arbitration board. Mr. Edwards stated that he will request Murphy Pacific to submit an asking price and then neogitate from there.

Mr. Edwards advised the Federal Highway people of Mr. Hedefine's statement at the Metro Meeting that PBQ&D wanted to include the Charpy test as a point of acceptance but the Federal Highway people would not let them. It is felt that he believes that PBQ&D will dodge behind this and the fact that the metallurgist's report indicates the metal contained weaknesses. Roy Tokerud will try to determine if any change in their specifications was made at the Washington, D. C. level.

Mr. Simpson suggested that in negotiating with Murphy Pacific information be exchanged, inasmuch as each others information would be available in case of court action prior to going to court.

A. E. Johnson
Assistant State Highway Engineer

AEJ:ja

cc R. E. Simpson, Division Engineer
Federal Highway Administration

Roy Tokerud
Regional Bridge Engineer
Federal Highway Administration

George M. Baldwin
Tom Edwards
F. B. Klaboe
Walt Hart
H. S. Coulter
Ed Hardt
R. O. Cunningham
L. I. Lindas

RECEIVED

7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
March 16, 1972

To: MEMO TO THE FILE

SUBJECT: Fremont Bridge Superstructure
Stadium Freeway
Contract No. 7276

At 10 a.m. this date, Jay Murphy and Al Tokola of Murphy Pacific Enterprises met with Mr. Edwards and me concerning repairs to the fractured beam on the Fremont Bridge and the redesign of all similar joints. Mr. Edwards displayed Howard, Needles, Tammen and Bergendoff's Designs S-1 and S-2 and also Design 2 by Parsons, Brinckerhoff, Quade and Douglas and indicated that he would not consider the latter one.

Mr. Tokola indicated that he preferred the S-1 detail from an engineering standpoint in that there was a better distribution of stresses from the arch rib to the stiffener beam without stress riser effects.

Mr. Edwards stated that as far as he was concerned the redesign must be the best one possible, and to this the contractors agreed.

The contractors are meeting with their consultants on Tuesday, March 21 and will show them the various design concepts we have. Mr. Edwards requested that following this meeting, they give him their recommendations or preference for the design.

Mr. Murphy stated he had already talked to U.S. Steel and that as soon as a new joint was designed they have agreed to start work on fabrication of it immediately.

Mr. Edwards stated that he will give the contractors a change order encompassing a redesign of the joints and will take steps to suspend the assessment of penalty charges without any evaluation as to responsibility until a final assessment is made. Mr. Murphy stated that he does not want to waive any of his rights in the acceptance of such a suspension and this was agreed to.

In the very near future, Murphy Pacific will submit a proposal to us for painting the structural steel on Swan Island prior to erection and a proposal for the elimination of sandblasting on splice plates and bridge ends. Mr. Edwards assured them we would give the proposals full consideration.

A. E. Johnson
Assistant State Highway Engineer

AEJ:ja

cc Jay Murphy, Project Sponsor
Murphy Pacific Enterprises
P. O. Box 4335 Bayshore Station
Oakland, CA 94623

Al Tokola, Project Manager
Murphy Pacific Enterprises
5050 N. Channel Avenue
Portland, OR 97217

R. E. Simpson, Division Engineer
Federal Highway Administration

Roy Tokerud
Regional Bridge Engineer
Federal Highway Administration

George M. Baldwin
Tom Edwards
F. B. Klaboe
Walt Hart
H. S. Coulter
Ed Hardt
R. O. Cunningham
L. I. Lindas

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7276

March 9, 1972

Mr. Jay P. Murphy, Project Sponsor
Murphy Pacific Enterprises
P. O. Box 4335 Bayshore Station
Oakland, CA 94623

Dear Mr. Murphy:

Re Contract 7276
Fremont Bridge

As a result of the State's investigation of the fracture at Panel Point 3, it has been determined that the fractured section and its companion on the north girder will have to be removed so that modifications can be accomplished on the ground.

In order to expedite the work, we are hereby asking that you commission Earl & Wright to develop a sequence and stress analysis for this operation for our approval at your earliest convenience.

At your early convenience, I wish to negotiate the entire matter of repair of the damage, the removal of the undamaged piece at Panel Point 3 L, the additional falsework, and the cost of modification of the two joints at the west back span and the two joints at the east back span in one complete price agreement.

Very truly yours,

George M. Baldwin
Administrator of Highways

By

Tom Edwards
State Highway Engineer

bc Al Tokola (Project Manager for Murphy Pac. in Portland)
bbc Federal Highway Administration
George M. Baldwin
F. B. Klaboe
A. E. Johnson
W. J. Hart
H. S. Coulter
R. O. Cunningham
L. I. Lindas

TE:ms

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7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon
March 9, 1972

To: Memo to the File

SUBJECT: Fremont Bridge Superstructure
Stadium Freeway
Contract No. 7276

Afternoon Meeting at
Metro Conference Room
February 29, 1972

On February 29, 1972 a meeting was held in the afternoon following the general meeting held in the AM.

Those in attendance were:

* Tom Edwards	O.S.H.D.
* A.E. Johnson	"
* Walt Hart	"
* Leonard Lindas	"
* H.S. Coulter	"
Edward Hardt	"
* R.O. Cunningham	"
* R.E. Simpson	F.H.W.A.
W. Jack Wilkes	"
* H.A. Schell	"
Robert B. Rutledge	"
Roy Tokeruki	"
Harry Czyzewski	M.E.I.

Mr. Czyzewski explained further about the metalurgical effects in the radius of the junction piece. He stated that the laminar cracks in the metal would cause a stress riser of approximately 1.5 and he estimated that the heat effected zone in the metal would cause a stress riser of 1.25 to 1.5. Other factors which would contributed to the crack would be stress risers in the design, residual stresses from fabrication and rolling, and large partical size in the crystaline structure. Biaxial and triaxial stresses exist and would contribute but their magnitude is not know. The residual stresses might be as high as 10,000 psi and can only be measured by having the whole piece of iron and relieving the stress to determine how much was present.

Those factors which contribute to such a failure but were not felt to be significant in this instance are temperature, dynamic loading and Hydrogen embrittlement.

NOTED
A. E. JOHNSON

The combination of the stress riser due to design and the major metallurgical stress risers would have caused the failure.

Mr. Czyzewski left the meeting.

It was generally agreed that the fractured piece had to come out.

PTI and PBQ&D's responsibility was discussed.

Liquidated damages were discussed and it was decided that when the contractor gets back to the point that he can proceed normally, after installing the revised joint, he will be charged liquidated damages.

Mr. Edwards listed the following items and proceedure:

No. 1 The metal may have met specifications

No. 2 The metallurgy in this case and the method of fabrication left something to be desired

No. 3 We are going to redesign the joint

No. 4 The removal of the fractured piece and restoring the girder are up to the contractor. We will do the revision.

No. 5 We are going to redesign the joint

None of this is to reflect on responsibility as Murphy Pacific is responsible for removing the fractured piece.

A question was raised about standby time and Mr. Edwards stated that he proposed to ignore it.

Roy Tokerud and J. Wailkes suggested neotiating a price agreemcnt including a time adjustment for the time from cracking of the beam to now.

Mr. Edwards mentioned the shoes were a problem and we are still faced with the question of a time extension in regard to them.

F.H.W.A. people agreed to Tom Edwards negotiating with the contractor for a price agreement covering all facets of the problem including any liability on the part of the contractor.

Jack Wilkes suggested working up a liability chart:

	(Contractor)			(Owner)		
	Mill	Fabricator	Erector	Consultant	Hy Div.	F.H.W.A.
Materials	x	x		x	x	
Specs				x	x	x
Design				x		
Const.		x	x			

We will await redesign and in the near future prepare for negotiation.

Mr. Simpson will go along with administiative action to suspend assessment of liquidated damages without any commitment as to responsibility or liability.

Contractor has been instructed to investigate availabilty of materials and his plan of replacing the joint. Al Tokola of Murphy Pacific has ask to have a meeting with Tom Edwards, and Bob Cunningham is to arrange such a meeting.

R.O. Cunningham
Resident Bridge Engineer

ROC:dgh

* Received a copy of this memo.

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STATE HIGHWAY ENGINEER

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MURPHY PACIFIC CORPORATION

4300 EASTSHORE HIGHWAY . EMERYVILLE, CALIFORNIA 94608

7276

State of Oregon
Department of Transportation
Highway Division
5821 N.E. Glisan
Portland, Oregon 97213

March 3, 1972
Report #4

Attention: Mr. R.O. Cunningham
Resident Engineer

Subject: Labor and equipment directly effected by the Girder Failure of 10-28-71 - Period of 2-1-72 to 2-29-72.

Gentlemen:

The following list reflects labor and equipment that continues to be directly idled by the girder failure of October 28, 1971. This is the fourth such monthly report.

Equipment idled @ West Back-Span site:

1) Manitowoc 4100W Crawler Crane
1) 20' Office trailer
1) stairway tower
1) falsework tower
1) elevator tower
2) concrete footings
1) 600 cfm Joy air compressor (as of 11-19-71)
1) chemical toilet (rental: L&M Service)
apx. 19,000 sq. ft. safety nets
misc. barricades and lights

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Resident Bridge Engineer

NOTED
A. E. JOHNSON

Equipment idled @ East Back-Span site, as of Monday, 12-20-71:

1) Manitowoc 4100W Crawler Crane (as of 11-23-71)
1) 20' office trailer
1) 40' change shack-trailer
1) falsework tower
1) stairway tower
2) FW 1 footings
2) FW 2 footings
1) Jaeger 600cfm electric air compressor
1) traveler scaffold

TELEPHONE (415) 653-1717
CABLE ADDRESS "MYPAC"

MAILING ADDRESS
POST OFFICE BOX 23007
OAKLAND, CALIFORNIA 94623

MURPHY PACIFIC CORPORATION
4300 EASTSHORE HIGHWAY . EMERYVILLE . CALIFORNIA 94608

Labor flow for period of 2-1-72 to 2-29-72:

48 men on the payroll as of 1-31-72

1 Ironworker laid off @ Swan Island, 2-1-72

1 Ironworker Apprentice laid off @ Swan Is., 2-1-72

2 Ironworkers hired @ Swan Is., 2-4-72

1 Ironworker General Foreman quit @ Swan Is., 2-4-72

1 Ironworker Foreman quit @ Swan Is., 2-4-72

1 Ironworker Appr. laid off @ Swan Is., 2-4-72

2 Operating Engineers laid off @ Swan Is., 2-4-72

3 Ironworkers hired @ Swan Is., 2-7-72

2 Ironworkers laid off @ Swan Is., 2-8-72

1 Pilebutt laid off @ Swan Is., 2-9-72

1 Ironworker quit @ Swan Is., 1-21-72

1 Ironworker rehired @ Swan Is., 2-17-72

1 Ironworker rehired @ Swan Is., 2-28-72

1 Ironworker rehired @ Swan Is., 2-29-72

45 men on the payroll as of 2-29-72.

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President Bridge Engineer

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MAR 7 1972
OFFICE OF
STATE HIGHWAY ENGINEER

Very truly yours,

Theodore D. Fox

cc: WALT HURT
H.S. COULTER
A.E. JOHNSON
TOM EDWARDS

cc's: W. Choate
J. Riffell
A. Tokola

TELEPHONE (415) 653-1717
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OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon 97213
March 3, 1972

To: Memo To The Files

SUBJECT: Fremont Bridge Superstructure
Stadium Freeway
Contract No. 7276

Meeting at Metro
Conference Room

On February 29, 1972 a meeting was held at the Metro Conference Room.

Those in attendance were:

*	Tom Edwards	OSHD	State Highway Engineer
*	A. E. Johnson	"	Assistant Highway Engineer
*	Walt Hart	"	Bridge Engineer
*	Leonard Lindas	"	Chief Counsel
*	H. S. Coulter	"	Metropolitan Engineer
	Edward L. Hardt	"	Assistant Metropolitan Engineer
	Kamal Kamadoli	"	Design Team Supervisor
	James Broad	"	Ass't. Resident Bridge Engineer
	Jerald Backstrand	"	Design Supervisor
*	R. O. Cunningham	"	Resident Bridge Engineer
*	Robert Rutledge	FHWA	Regional Counsel
	H. A. Schell	"	Division Br. Engr.-Salem, Oregon
*	R. E. Simpson	"	Division Engineer
*	Roy Tokerud	"	Regional Bridge Engr.-Portland, Oregon
*	W. Jack Wilkes	"	Chief Br. Div.-Washington, D. C.
*	L. E. Lybecker	"	Dir. Highway Programs Office
*	Harry Czyzewski	MEI	Consulting Engineer
	Robert Crabtree	HNTB	Chief Designer
*	Edgar Johnson	"	Partner
	A. Gursoy	PBQ&D	Structural Engineer
	L. G. Silano	"	Associate
*	Alfred Hedefine	"	Partner

NOTED
A. E. JOHNSON

* Received a copy of this memo.

Mr. Czyzewski showed samples removed from the cracked tie girder and reviewed MEI's findings. He stated that the crack precipitated from three nucleuses on the bottom of the bottom girder flange in the area of the radius. They found the following defects in 588 steel:

1) A heat effected zone in the radius
2) Inclusions
3) Low fracture toughness. Steel with low fracture toughness of this type can fracture at 2/3 of the yield strength. However, they did find the 588 steel to be within ASTM specifications.

Mr. Kamadoli summarized the results of a Finite Element Anaylsis run by the OSHD. Their analysis was confined to the junction piece and under the webs. The results are as follows:

Case I: (complete release of FW 2)

Basic Stress	Stress Raiser	Resultant Stress
17.7ksi	2.16	38.2ksi

Case II: (completed structure under DL+LL+I)

Basic Stress	Stress Raiser	Resultant Stress
16.9ksi	3.16	53ksi

PBQ&D ran a Finite Element Analysis on the junction piece, but along the center line of the girder instead of under the webs. Mr. Gursoy and Mr. Silano presented their findings as follows:

Case I: (at failure)

Amplification Factor	Resultant Stress
1.123	27.23ksi

Case II: (completed structure under DL+LL+I)

Amplification Factor	
1.266	22.42

Mr. Gursoy and Mr. Silano disputed the boundary conditions used by the OSHD and HNT&B in their Finite Element Analysis.

Mr. Crabtree, HNT&B, stated that using a Finite Element Analysis they found a stress raiser, at failure, of 2.11 under the webs and 1.65 along the center of the girder.

Mr. Edwards and Mr. Simpson then raised the question of repair. Three possible solutions were submitted by the OSHD, one from HNT&B and one from PBQ&D.

Mr. Edwards requested that HNT&B, PBQ&D and OSHD personnel review these solutions plus any additional solutions they deem reasonable. Mr. Johnson, HNT&B, agreed and stated they could accomplish this within two weeks after receiving all proposals. Mr. Hedefine, PBQ&D, also agree but stated that minimum of two weeks be required.

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STATE HIGHWAY ENGINEER

R. O. Cunningham
Resident Bridge Engineer

ROC:p

I-405-8(17) Fremont Bridge Sec., Stadium 1969
303 Freeway, in Portland
#7276 (Superstructure) Folder #4

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7276

Mr. Edwards

Given as Press Release
Miles Greene
Don Johnson
KWJJ
KOIN
KATU

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon
February 29, 1972

To: Memo to the File:

SUBJECT: Fremont Bridge
Fractured Flange
Contract 7276

A meeting was held at the Metropolitan Engineer's office concerning problems arising from fracture of the main tie girder of the Fremont Bridge.

Present at the meeting were officials of the State Highway Division, the Federal Highway Administration and three consulting firms; Parsons, Brinkerhoff, Quade and Douglas, of New York; Howard, Needles, Tammen and Bergendoff of Seattle and Kansas City; and Metallurgical Engineers Incorporated of Portland.

All facets of design, erection procedures, metallurgy, and all resultant stresses were analysed. There was general agreement concerning stress limits imposed on the point of failure at the time of fracture. However, the design in question, it was agreed, was an extremely sophisticated application, very difficult to analyse.

The metallurgy analysis provided by Metallurgical Engineers Incorporated indicated that the metal used in the section which fractured met all the requirements specified by the American Society of Testing Materials. They did indicate the material was low in fracture toughness, even though it did meet specifications.

It was the concensus of opinion that the sophisticated type design, together with the welding process necessary to fabricate the section in question, may have resulted in locked-in stresses of such magnitude as to induce fracture under stresses applied.

Five different methods of improving the joint design were presented to the group by the various authorities. Instructions were issued to the consultants, PBQ&D and HNTB to study those alternates and recommend one to be used in corrective action. This recommendation is to be forthcoming within two weeks.

No assessment of responsibility was forthcoming from the meeting. Such assessment will be made when a revised joint is selected.

TOM EDWARDS
State Highway Engineer

NOTED
TOM EDWARDS

NOTED
A. E. JOHNSON

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OFFICE OF
STATE HIGHWAY ENGINEER

FREMONT BRIDGE CONFERENCE
February 29, 1972
Portland, Oregon

Tom Edwards	OSHD	State Highway Engineer
A. E. Johnson	"	Ass't Highway Engineer
Walter Hart	"	Bridge Engineer
Leonard Lindas	"	Chief Counsel
H. S. Coulter	"	Metropolitan Engineer
Edward L. Hardt	"	Ass't Metropolitan Engineer
Kamal A. Kamadoli	"	Design Team Supervisor
James A. Broad	"	Ass't Resident Bridge Engineer
Jerald E. Backstrand	"	Design Supervisor
Robert O. Cunningham	"	Resident Engineer
Robert B. Rutledge	FHWA	Regional Counsel
H. A. Schell	"	Division Bridge Engineer-Salem
R. E. Simpson	"	Division Engineer
Roy Tokerud	"	Regional Bridge Engineer-Portland
W. Jack Wilkes	"	Chief Bridge Division-Washington
Harry Czyzewski	MEI	Consulting Engineer
Robert Crabtree	HNTB	Chief Designer
Edgar Johnson	"	Partner
A. Gursoy	PBQ&D	Structural Engineer
L. G. Silano	"	Associate
Alfred Hedefine	"	Partner
Lyman Lybecker	FHWA	Deputy Regional Engineer

Harry C

there, and what I'm saying is that this crack probably came in essentially at this radius over its full length and probably gave it up. This has distinctly started from one quarter inch across this way and vice versa. ~~It-uh~~ Specifically, we found three distinct sites along this radius where we felt the fracture initiated independently and these sites were, two of them were under the web and one was just at about the center of the longitudinal centerline of the girder. We also found another place where the fracture had initiated and that was under the web weld and initiated out of the heat affected soles of this weld. In other words, we had that this was at the top of the structure itself as distinct from the bottom of the beams.

As far as this radius is concerned, we're ------ where the crack was started was within a span of twenty-four to forty-five degrees from the vertical. In other words, ----vertical centerline at the tangent point --- radius at the bottom edge of the structure. This fracture started within a range of 24 to 45 degrees around this beam. The report shows a --- profiles. This is a brittle fracture, started from the bottom of that radius and junction piece on a substantially vertical plane up the girder.

With respect to defects of material properties, first we found that running chemistry and tensile tests that the steel did meet the ASTM specifications of 85 to 88. However, there were three factors that were with respect to material properties which were very substantialfactors with regard to

heat affected zone
this failure. One of them was is that there is a --------
on the piece we had
in this radius. We found traces of it in --- on this side
---------- and we got this piece ----------
very substantial heat affected zone and I have some pictures
of the section that show that and I don't have enough for
each one of you, but I'll distribute the doubles we have
of it. ---------

The second --------

The third factor is that this material was very old
low
extremely ---- fracture --------and this is the what really
makes the crack why this cracked why why it didn't just
yield in this area. It had a nucleus, started in an area
that had a number of metallurgical faults and -- use a
little bit of qualification there because it still would
meet the specs. The specs are very general, very not
limiting in this respect and I haven't found where within
the specifications for 85-88 --------the specs, but they
are in very substantial weaknesses in that old ---- and
the three of them acted first as a ---- place for the
crack to start and second, to -- allow the crack to propa-
gate rather than to terminate. And along these lines, those
of you who have just gotten into the group recently may not
have had a chance to see what happened - where the crack
stopped. The crack stopped, they didn't go through the

main girder. I have the plugs that we cut out --- plugs that were cut out at the end of the fracture. This is now out of the end of the crack on the north girder, northwest, top girder, the northwest top girder and this was at about the 6-foot level and was at the transition weld between the ----- here and the 836 and 12. And its very clear, that there was --- deformation in substantial ----right here, that absorbed the energy available and which the crack had preceded. So this is the way the cracked material became when you have an overload ----- by plastic deformation rather than cracked. On the southwest, this crack terminated between the thicker 85 degree -----and the thinner web member and seems to taper here. But again it stopped in a weldjoint and with expanding plastic floor, flow in the crack.-----Now, we still don't have fully answered is the -------prime business -----quantitative drag -----so that they can be tied in and predict the ------levels of stress that occurred at the panel point ------One solution that I get was that the stress was below two strains of the material in the tensile test ---------and that could be as low as about 30 -- on the other hand, it was not to percent stress ----- I don't have that line on here (drawn or) weld here yet, but increase in I call it substantial level of elastic stress ---- on that order.

When we first made our tests, we were limited to this piece which is 3¼ inch thick, yet the plate ------- was 6¼ inches thick and this area was then relatively thin section of the weld and the fracture -----there was a question of whether this was substantial --------or stress ----at the fracture itself.

-----at that time. So when we got this piece, we were able to sections back here, rough physical properties out and found that they were in fact firm. If anything they emphasize the the firmness. Now for example, we found that that heat-affected zone, you see, we're on the other side of ---and just found traces of ----and here we find that it is quite substantial and in fact is nbviously not ----for over this .. This was an inadvertent type of operation so it is ------- being precise, heat affected zone like you would expect-- operation.---------Undoubtedly inadvertent---------- inclusions of laminate type of cracking that develops, they actually, these things you see in the photographs are cracks they are no longer simple----they are cracks. But they are essentially this piece shows potential for these laminate type cracks, great long, xx ¼ of an inch in radius. And shows of course that they are longer, the longitudinal xxxxx direction and shorter transvere direction, of the steel as as it was placed. Which, I don't know whether you were all aware, but we learned that confirmed that the steel was placed in such a way that the longitudinal direction of the girder was in transverse direction of the junction piece, and it is in the transverse direction that this is substantially weaker in fracture toughness than in the longitudinal direction. However, it still unknown -- fracture toughness. From the standpoint of failure, we xxx have three types of metal weakness, three that coincide with the purpose of locating (or duplicating?)

one operating to allow the contribution to the fracture sadz up through the tied junction into the web. Oh, this steel had a request in the purchasing; the supplier was requested to include material on the Charpy V-notch properties, plus 40 degrees, and ---- index of the fracture toughness, but they are not part of the 85-88 specifications. The temperature at the time of the fracture in service was on the order (the outdoor temperature) was on the order of 35 to 40 degrees. Approximately. But this also had to be the temperature that was requested for the test data. Now in transverse sections this has very low Charpy V=notch properties. And from this at that temperature just---the factor that concerned me was this overriding was this rereading more important one. I feel that the fracture toughness of this material was so low over a broad span of temperatures that it was not the drop in temperature that day that was the critical item. It may have contributed somewhat through attraction stresses; xx I haven't that data; but it was not --but it wasn't the case that this would have operated all right at 50 degrees or 60 degrees and I have/to (leapt) led that conclusion for one other reason and that is that earlier in the processing of the junction there was a pierce, crack developed during the coding from the welding of this ---beam---at the junction piece and clearly, the temperature, then, was not 40 degrees. Futther, our tests ---enfold

(End, Tape 1, Side 1)

hold the ~~lowest~~ lowest temperature of service, so this clearly was on the wrong side by a substantial margin so this is one additional conclusion we came to, it wasn't too clear on our initial work but --- but the temperature; so it was not just a drop in temperature that day and that night that was the crucial factor. I don't know how much of the details of these findings you'd like to have, I'm certainly available for questions.

(tape blank for a space)

Now, this is a rather important thing when it comes to one of the specs that applies in finding these. ~~Yaux~~ You'll have it in general requirements the difference in plates associating it with specifications for ASTM employment and it makes a design by emphasize it point of whether the ~~design~~ ~~physical~~ physical eye rather ~~make~~ the friction ~~than design by~~ by magnetic principle or magnetic particle.of weld

Now, in the report itself, after you know;these photographs are of different magnet positions, the upper one is ----in arrow and just half and ~~its~~ points of the profile of the fracture above the short lines left hand arrow there are three horizontal lines/and these are at shown ~~in~~ higher magnification in the lower photomicrogram in proportion to that shown at a hundred microgram --- You'll notice that there is some win cracks, but this is right adjacent to the primary ~~fr~~ fracture and these have opened up substantially. Our others show these to ~~where~~ where they're ----cracks are very tight. They ~~are~~ cracks, but rather justification rather than ------but they are very tight. For example page 40 now shows

one of these. -- Relates to this matter of this brittleness, (Rolled?) fracture toughness of the steel, it does meet the physical requirements of the specifications but it does have a relatively coarse grain and this is not unusual in such heavy sections of (temperature) --- produced in the process of rolling ---- to the same extent that a smaller bars ---so there is a relatively coarse grain of 3 to 4 grain size with an xxxxx on the order overriding coarser grain of xxxxxzero to one,grain size 1 is ordinarily. finer very light/5 is xxxxxxxxxxxx finer, fine generally ----steel plate. But again this is not in --85 of the specifications. and should have been put in as a special requirement ---Now, coarse grain is associated with brittle---- however, again, I don't think this is xx all the----------

Those of you who have not had xx a experience of how this metal behaves; for example in this simple test, I have brought the test parts here with me to illustrate this point very well and also to/////// shows the effects of ------ (Voice) ---about 72 that's the requirement, but not ------

---show you the tensile parts ----tensile test, should have a one-half inch diameter 3-inch long section---test by having a little heavier ----. Gets to the point of highest and lowest/// compared. You have to do that because ---because of the xxx fratture -----What xx it does ------down in certain areas. The load drops off and starts to bend down and we find that it -----very substantially with the stress xxx at the point of fracture ---which additionalyis xx one-half inch in diameter.

---stretched out 20 percent. Which is almost a half-inch in inch length and this is the way the steel is expected to behave and, normally, you'd design -----think that ----taken care of. The steels have a bad character which seems to be ----~~for instance~~ in and in the traverse direction ----------has a high level of fracture toughness that in the process of breaking it'll burst and ~~xxxxx~~ spread and form very substantially ---just at an angle like this then it'll start to crack the crack will propagate through and it will show the evidence of deformation in ----plastic flow of the metal before it has actually broken. Now this is what it failed to do in these wide series of tests. -----the break ----as an expression like of/cast iron ---very brittle--- or of glass, or things like glass ----just a low level of energy to produce later --- these are ~~xxxxxxx~~ longitudinal and transverse sections and each case -----well below ~~x~~ 15 per pound --- see the brittle type of characteristic of the fracture ------- have tests at 110 degrees which the longitudinal samples showed ~~xxxxxxx~~ substantial deformation of ------before cracking and this is more what you would expect if the material was riveted to a-------. Essentially, if we were to take the tensile test and run it at zero degrees, it would not change the results ~~x~~ significantly. ----points here----this transition temperature at which the ~~xxxx~~brittleness occurs---tests like the charpy tests rather than the tensile tests. ---~~xxx~~ essentially the same properties, stability, longation, traction, yield.----

I recall the day not at
(voice) xxxafter this happned, being up on the bridge,/where I could see the failure, there were several ---- inch-one inch and aquarter long , only a quarter or an inch or so in depth

---

(voice) ---these areas corresponding to this -----

(voice) no,-------were with me ----this piece and this ----like this----looking at it.

(voice) yes -- similar to that (voices - indistinct)

(voice) ---northwest-----

(voica) ----on the same side)

(voice) -----xxxx somewhere near the area----- (jumble of voices - unable to sort out anything-------)

(voices) --fracture surface and a lower chart is the profile of the fracture along the radius. Now I gathered that the ------ xxxxxxx an inch ---the fracture -----side-----photograph----- would have been in between the 17 and 22, -----22------

Now you'll notice there aren't any xxx shelves there but there is one other aspect of this particular area. We concluded that the way the fracture occurred is we have a nucleus site over here of 11½ inches and another nucleus site about 32 and the crack xxxxxxx propagated toward this ------from both sides and that this rather than being a start of fracture was actually where the two fractures ---at the second stage (too many voices -- nothing clear) 11½ ---and one at 33½ ----some degree where we have this shelf. Now ----we have a shelf here corresponding to the shelf here and I would expect to see ------here at the time the fracture was stretched.-------and then, since then, in our metalographic

preparation. I feel we would have found very clearly the ------ preexisting such that there was surface steel, or corrosion during the three months past ----steel mill, and was a heavy laminate, I think these things combined ---explain the characteristics ----

(END, Tape 1, Side 2)

Somehow they were missed --- inspection. Of course that is a very awkward way of doing an inspection, but we obviously looked. But this sort of thing is very important to me -- wher did the crack start was it bare earth or in the processing. whatever happaed. Back to my initial presentation which is an single step ---- had flaws in it. ----laminated type crack -----initiation of the fracture was ~~xxxx~~ essentially a single step. It might be a good thing -----to explain why we have a concentration of flaws in this point (jdnt) ----- concentration in that radius. It might be ---------

(voice) It isn't completely random and ------

we have the meter solidified -----the center and the outer area -------we find evidence ---- something like that. The cross-section------Now, we have a rectangular piece like this and backs away ---------- this was the major pattern -----6½------junction ----junction piece. This section is 3½ inches thick, just about the centerline and its cut (cracked) like this, so that we have this beam ----right hand -----one additional fracture which shows an additional concentration ------Yes, they are permitted by the specifications ------even to the extent that ~~xhxy~~ they --------~~Ha~~ Now a lot ~~xfs~~ other ---------The general specifications are quite generous in my point of view, ------ cracked clear over here and then stopped.---------material that has fractured---------- Under a ------like that, it cracks open and --------there's no propagation---------- normally ------all that except as based on the -------area

there are a lot of ----
select qee ---bars ---the top fracture ----stringent specifications that would have eliminated or would have called -- more technical ------ clearly as fracture toughness --- a more recent phenomena is getting a lot more attention-- but the sharpest part of that is commonly in the specifications. ---But this is like----any type of specifications--- how is it involved ----------my findx findings that xxxxxxxxxxx ------something like ten percent -- that it was ----------perhaps in a lowest ----- In this particular instance there were the temperatures -------at the highest point. In other wcrds, --------crest--------in that area substantially hotter (harder)----------defined area like that ----- not supposed to have -------500 hundred. I don't think that 1500 -----so that is very poor/practice -----now the argument -----they are allowed ------past the weld. And I agree--- they were allowed weld metal sections ---xxx as allowed there. So if it's the metal welding------at this point. As allowed there. But that doesn't mean that any plate throughout the -----likewise. In fact -----.

-----5 inches. 4 to 5 -----

In a case like this when you ------

has to take into account, change the typicals, (physicals)---- in such a way that you change the design concepts
what i'm saying is
------It's more important 5.0 ----5.0 isn't much dfif dif-

ference but----------

higher tensile ----strsses of that are 1100, for instances this is below that -----

(end, Tape 2, side 1)

On August the 17th, Captain ___submitted to the Commander, of OAN as officer of Aids to Navigation, United States Coast Guard, 13th ~~Dist~~ Coast Guard District, Seattle,

Dear Sir:

This letter is in regard to the application of the Oregon State Highway ----

Voice - -----alteration -----indicate that ---------havent' had any call on ----- United States Steel 42,000; you'll notice that they are less than 4 inch thick; which makes a gap of between 4 and 5 inches.----In any case, the fracture steel strength on this one is 49 ----normally considered as 7 ----requiring----- take a look at our other jobs ----longitudinal section ------ at the 3¼-inch level ---it had a 47,900 -----so it is still well above ------- the transverse section in that area was 48,800. ---------Longitudinal bars ----26 and 29 percent; transverse bars it was 22 and 25 percent -----still above what 21 percent------

(voice) -- test conditions which prevailed during the back span erection actually -----principally to the back span emplacement which we have gotten the figures on with various -----principals----- back span emplacement fleet. Based on the results of the analysis of the frame, we checked the machined junction piece and isolated it and ran a finite element analysis on that and Mr.~~xMxxMx~~ Kamadoli ~~x~~ did the work and gamal, if you'd just go over briefly what the results were of the basic frame analysis and then the conditions forming the basis for the finite element and the results of that.

(voice) Okay ----Knowing the -----erection -----I -----basic-----
basic ------analysis-----And ------at that point ------here.
and then went back ---------basic stress------4 inch flange------
and -----in other words, false work of the back span------
span ----inches at the bottom flange plate. ------falsework-----
strip of 17.7 inch per square.-----arrived at this condition ----
in other words, the lower of the jack----the basic stress -------
15 and one half ----taking the -----we went to a little more re-
fined work in -----because of the -----piece itself. Radius
and the flange of the -----running through the ------archxxxxx
So we went to finite element analysis ----- and we dewided this
element, this section into radius ----elements -----stresses.
So we used mainly rectangles and -----finite elements and ran
knowing the basis stress in the flange itself, we applied the
-----load -----finite elements and that from the ----------
radius of the machined piece and we xxxx found out that the
stretch riser without any falsework was as much as 2.16 times
the basic stress. In other words, our basic stress was 17.7 per
square inch. the stress riser of 2.16 ----38.2 per square inch.
of stress. ----the failure, taking basic stress at 16.3 psi
the maximum stress would be up to 32½ inch per square inch.
Average back to the finished xxxxxx structure ----and using
the design loads that -----have given on this stress piece---
what the basic stress would be ----3 to 4 inch ----I came up
with a figure of about 16.8, which is well below the allowable
stress area. And then again I went back to the finite element
analysis -----regular ----have for this kind of loading and I xxxxxx

found out that it was much different than what ----3.16. In other words, with the basic stress of 16.8, stress ----of 3.16, I ---- had as much as 53 psi maximum stress radius portion of the ------ piece.-----finite element run, ----went back to -----graphical charts ----basic ---radius -----specified fragment. I wanted to see how close I would be using the finite element analysis---- and I was surprised how close they were. ---------- one and one-eighth bar -----I came up with a fracture of 1.78. I would say that's pretty close----so, on this part, of ----- (voice) --State, or Corps of Engineers submitted a detailed study of ----------, showing the proposed jetties they attempted to build--------

(end, Tape 2, Side 2)

-------what the ----are, the basic stresses are and ----------
liable to go as high as 53 (63) psi.

Voice - issue are on the finite elements.

----------i could accede that the web itself there, the web sitting on the finite elements

We have ax kind of some fixity of vertical direction ------ vertical direction, but I give the --------- the same ------ on the wide direction, the left center beam, of the piece itself ------ fixed -----you have do do this in order to run analyses. Fixity citation(?) ---------- the left edge of that one, I left it free -----vertical directions ------

Also, I guess we could analyze what happened between the web (weld) -------

But I won't know that, not permitting to do this on a splice ---------- analyze only of the webs (welds). -----

(another voice) No, we weren't able to , our program ---- just at the web (weld) -----where we did establish our boundary position (condition)

------presentation of our analysis and by the way, that was center -------not -----of the web. ------ shows(or imposes) certain restrictions that we feel are not applicable to the web and we ------have questions basically we got lower stresses than -------information ------

So, we'll present ours and we have all of our information here and ----------. By the way, ------ cost analyses for the specific bridge for our firm and ----------

(tape mostly blank)

on the erection position we ran a come up with a stress of 12 psi on top of the bottom plate, flange plate. Reading or Leading) into the junction at this level, we come up with 22 psi of the bottom fiber, leading into the junction. The arch rib had compressive stresses at the top of 5.28 and the bottom of 7.6 ----correction ---. Now, at this point where the end of the junction occurred we have stresses of 10 psi at the top/and 13 psi at the bottom. Now this was very unique in fact it enabled us to be able to go ----- finite element analysis of the junction because we had a stress condition existing at the ------ points which is something that we think is more important than trying to analyse this boundary condition. The net result was the stresses in here, we didn't rely on too much because we know that we do have this root (group) big enough to be able to really ------down on it. But we do know the xxxx stressx xffxxxxn effects in running, we do know the stress effects anywhere else at the end of our trip. On that basis we were able to go to the finite element analysis for the junction pieces itself. ---------- finite analysis ----erection graphs --- junction pieces. We could only really do a xx plane sprain analysis at to really come up with a state of xxxxxxx stresses we would have to go to a type of element that would take into consideration this seat erection because what we are doing is just an X & Y , which is xxxxxxx negligible. (analysis) So,

we looked at this from the standpoint well, where in this
between the two webs
bottom flange/could we make a plane strain analysis that

reasonably represent

(END, TAPE 3) Side 1

Point center ---of the flange. There, the effect of the strains ---erection were small. ----boundary conditions. You see, we didn't have to establish any boundary conditions whatsoever. we knew the state of stresses,---for the large part of our analysis. We knew it here. And also know that factor ----

(voice) This is only the junction piece---and of the full junction piece 33 inches --

(voice) Now you can see our bridge is very small right in here --~~xxofsanssixeshs~~ ½ of an inch, which I think basically is Walt about the same that you people --- rectangular analyses. Well, from this condition you find that the structure basically is almost balanced. The loads are all balanced on this. You only have to establish one location of holding while it is being analyzed. You have the actual physical condition of the plate as it existed at the time the crack developed. We picked the support points where our diaphram ---- the purpose of the diphram was to take the vertical reactions and that we did locate as the support point. We also have to a point of support at this location, because as you say, there are certain restrictions with the analysis that you have to establish certain support conditions, otherwise you just ---- So we picked that location ---The shears ----development. Now the shears are ----horizontal shears. We located them at the center along here. We balanced the ----OK and ran ---the results of the computer analysis, both for the design and for the erection conditions are we have during erection the direct

force, the applied stress of 17.00, the output is 21.26, the application factor is 1.251. Now the contribution of the bending, which is 5.11, as mentioned before would give you an application factor of 1.168. Now, the total combined stress of both direct force and bending, we found in the amplified the amplification of stress is the greatest at the PC. The point of curvature is where your stress is the greatest and that was 27.23, or with an amplification factor of of 1.232. That was in the case of the erection ----. The final condition, we come up with a stress of produced a stress 22.42, putting your direct force ---and the output/of 19.29 at the edge of ----come up with a factor an amplification factor of 1.266. At the time of the crack we had 27.-- and that the maximum stress -----. This is what you would call a one-inch (or running) strip) centered along the longi-center tudinal/line of the girder. You can strip that junction piece one inch wide and run ------stresses. Now, we don't believe that you can do this onto the web. For the simple reason, that no matter what you did its all arbitrary depending upon the support conditions you have to assume. Ten different engineers would come up with ten different answers. The only real way you can do this is by a solid element (or elevation) analysis and that would have to isolate the complete junction including the girder webs. That's the only real way to come up with an answer that way. We do feel that the (or at the center) this is accurate enough-----

(jmble of voices)

Well, we don't think that -----is applicable at all. His results, are most of the results of his book, are based on photoelastic analysis and experimental type of things and you don't have anything that is comparable. I mean, if you make an assumption that your fillets slogs on this side or if you go to trouble it, you can get different results entirely. So, we just didn't want to waste our time in that. stage of the game to try and power-linkthe thing, we din't think it would be worth while.

(voices)

One of the things we/got/of Howard Needles -----got just results of ---yesterday and we haven't ----look at it. One of the things that may be problem is that isolate the junction/3 inches from piece Panel Point 3 and you provided no you did not allow the junction piece to be able to flow in the direction of the strain. In addition, you had strains this way, -- under the wab and you had some elastic supports out somewhere else and we think that the significant thing -- would be that there is strain here, as well as some real high stresses out here. You are so close to this area that the strain, which I don't see physically how that restraint develops-----

(voice) - finite element. The stress change only in that released part----radius come back ----

(voice) You see, I think you have to use hypothetical approach because you didn't know the ---stress existed anywhere along the junction piece. That was one of the reasons we were able

to do this is because we had the output from the other finite element analysis.

(voice) - I'd like to add I think one of the important things about boundary conditions is that you have to select one or two, that is, either you have to select a stress field or you have to select a displacement field. So, both should be known. This should be ---exactly at the ~~xxxx~~ ~~xxxxx~~ state of stress what the pieces surrounding ---you know the state of stress of one side, select some kind of assumed displacementfield the other side; somebody else comes along and tells -----
I think that we had this thing here and we were able to get stress fields all around through ends and sides, ---we know what the stress values which comes off the finite elements. ---the fact that we have a finite element at the bottom flange and as small as we could, we were able to pick up the stresses in the ----of this boom.

(voice) In the center

(voice) It was almost perfect balance

(voice) ----and I requested that --80's

(voice) You pointed out certain stresses in that ----combined How did compare with the basic analysis.

(voice) The basic analysis said that the stresses were 16.5

(voice) right with ---

(voice) with 17.

(voices) indistinct

(voice) with the applied stress of 17 direct force and a bending moment of 5.11 (or 511) (spoken as five eleven). That exists

out here at the weld. Right. At the weld. From the analysis that was made by stress fragment

(voice) displacement analysis?

(voice) It was a direct force pushing, getting moments, getting axial forces. So the only thing you can pull out of that is that you have a direct force there of about 16½ psi. So this would, if you would average the 22 andthe 11, you'd probably wind up with about 16 as an average stress.

(voice - indistinct)

(voice) The finite element analysis is giving us results that of -- one thickness

(voice) analysis

(voice) -----11.89,--22.11, ----compared 11.89 with 22.11. Assuming -----solution -----depth of that plate 4-inch, I applied a force and found out ----stress riser I get in the radius, ---and I found out that I get as high as -----but when --- boundary condition

(voice) but that's the whole thing.-----

(voice) Now someone else assumes another boundary condition at this point, they're going to come up with an entirely differenent set of stresses. The question is to reproduce in actuallity what exists ===itself. Setting up a condition like that I think is something that is questionable.

(voice) - --stress field on this plate

(voice) -- select a displacement field from a junction piece like that would be impossible. I mean, its inconceivable. a stress field, however, is -----

(voice) - the problem that you're facing here is coming up with a reading analysis with only applying a stress at one point. In order to solve the problem you have to condition the other side. You have no choice. But that's [illegible]

(voice) Well, that basically covers xx your thinking.

(voice) Yes, except that ---you would have to go to a solid element analysis if you wanted to carry this any further and its our recommendation ------

(voices, indistinct)

(Voice - Well, I think theres no question---

(voice) - Well, I was going to let you go over what you had, Ben, (then), so why don't you just take it ------

(voice) turning off here, I think the pretty much facts of the problem is [illegible] exactly as --- your trouble is --- some sort of comparison of results ----get some answers to ---based on the ------At the time of failure we would --- psi, average this, -----

(voice) ---not very well--

(voice) Comparing stress concentrations again, and this is based on the similar boundary conditions under the web plate ---stress concentrations [illegible] applicable to the stress at the time of failure at about 2.11 --and2.16. Between the webs, based on applying flexible supports ----flexible---this reduces to about 1.65, something in that nature. Based again on these figures, we would have predicted stresses in the order of 4000 psi. These could have been reached if falsework bent had settled lower ---best information

available. ---- We did find again a significant change in' stress concentration if we have combined tension in the flange plate with friction --- I think what it boils down too --- everyone talking about the same thing, around this machined part, at the time of failure, there were some stresses-----Al's statement in here----Nonethe less, the failure occurred and ---about was that for a one-time loading this material had improper stress of the ---------- I would have ------

(End, Tape 3, Side 2)

---weld and think we have to say at this point ----finite
of the foundry condition of the
element analysis-------section we have here; they are very

sensitive-----small variations -- element here of 6hundredths

-----Now I think our point here is that there may have

been a fracture ---in this place before this section was
we've got to be
erected.-----concerned with how accurate the fabricator ---

erection problems and all the other points we've talked about.

We know this is a very sensitive section. A minor change in

it, multiplied a chain of stress ----I think our point here

is that we're not talking about the plan as it exists

now ------

(voice) check the design specifications

(voice) all the way through. A very excellent check.

(voice) but what you are saying is that the same thing that

I tried to say a little while ago, you can't check all of the

field conditions because you don't know what they are.

(voice) you don't know what they are, but you do know ------

(voice)--at this point you would not ----the spans; the plans

as they now exist.

MR. EDWARDS: Jack, what's your analysis?

(attempt to
(voice) Well, I'm I'd like to ----the job. (find the culprit in the job)

and put some heat on him because -- what I'd get is -- I think

I'd attempt to let him speak

(voice) I'd like to ask him one question: If this bridge was

topless, there were no loads -----

(voice --- no deadload on it----

(voice) -- satisfied with that joint---

(voice) That's an odd question, because with what has happened in retrospect, it has had a tendency to tell me your answer. Certainly, had that bridge been erected, fully erected, it is my position that there would be no reason for us to question this at all. ---- The material that was used in the bridge at the junction point is being questioned right now.

(voices - indistinct) no reason to question that bridge -- that span

MR. EDWARDS ---- satisfied with that joint

(voice) --the bridge

MR. EDWARDS: yes, the bridge ---

(voice) and if the material was satisfactory

(voice) what

(voice) the material was satisfactory

(skipped)

MR. EDWARDS: let me ask you this, now the specifications specified a certain kind of material, in a certain manner and ---and I suggest we here this morning give it a very ~~through~~ thorough analysis. This is their duty.

(voice) -- strength of the material in one direction as compared to the other.

MR. ~~M~~ EDWARDS - Well, we know this and

(voice) there can't be any questions a multiple of 1 to 5

MR. EDWARDS: I know this but the specifications and steel details do not prevent this ---correction, adverse to the grain.

(voices - indistinct)

(voice) - Recognizing the condition of this one, of four joints, -------the same as all the others. What you're saying is that we should not proceed with the erection -----possible answer. ---I think, Tom, we are not in a position (at?) the Federal Highway ----general position -- specific statement of about bit responsibility ------we'd have to discuss this a little/after we have appears the reports on file. But I have to agree with Ed that this seems to be a rather sensitive xxx detail, you might say, and a number of items in question, ---like stress conditions---recognize that. So many things I feel ---couldn't safey proceed with erection as it is now, got to xx do something about it, that's why I feel we aren't in a position to make a statement on it at this time.

(voice) - I guess what you're saying is that have not ----test at this time, but ought to use this opportunity to do what we can to develop some plan to solve the problem. ----

MR. EDWARDS - I think this is

(voice) ----keeping it separate from trying to assess responsibility -- pretty complex operation and would have to involve ----other than at this table, but ----have material, specifications,

MR. EDWARDS - Procedures

(voice) procedures, xxx and then the various elements of responsibility, have to have the mill, have to have the fabricators, have to have the erectors, ~~overall~~ after all(?) contractor's the/responsibility

and [illegible] over on -- inaddition, you have the consultants, ----and then the Highway Department with the Federal Highway Administration. I think all of these we've measured (mentioned) here will show certain degrees of responsibility, perhaps after we develop ----and assume their own responsibilities in correction

MR. EDWARDS: I think this is true, Jack and its not my concern at the moment to attempt to find out [illegible] who is to pick up the tab and who is to be assessed for this and [illegible] who is to [illegible] be assessed for that

(End, Tape 4, Side 2)

---

question about it. ----------

On the side you have a zero status stress, the other side you have another status stress and in Z direction you have another status stress. You cannot apply plane strength. The plane strength says the following. You have to sacrifice one direction of the stress in order to do ------ analysis. -------Z direction ----- is small, very small in comparison to the wider length and that's why they're ignored. That's why you can take a --------- strain. However, of course, you will ------ Z forces -------. When it comes to a ----------, that's the only place we ---------- we could apply our analysis was of the section. If you want to do the flange or stress under the web, solidarity analysis, driving the total width of the flange. Of course, we are going somewhere on the web whereby we can of the object itself define of the previous analysis cannot --------- x as well defined ----- So ~~xxxxxxxxxxxxxxxxxxxxxxxxxxxx~~ this is precisely why in making this analysis the areas of the weld, we have/gotten much actually smaller elements. One end of the ------piece, the other end of the (sculptured?? piece). ---- Right here. There. These are the ----- points, whereby we eject the --------conditions. That plate, that plate, ------structure -----apply stress ~~steels~~ yields as a ----------conditions ----side and not on the girder -----expecially the area where -----well, you get a solution-- that's exactly what you'll get ------ everywhere or, -----no, no, ~~there~~ this is a one-inch ------one inch ------your analysis of

-------metallurgical inspection ---- I would --- answer ---
such that ------- our analysis --- failure of expansion -----
MR. EDWARDS: Are there any more questions? summarized. I want
get back to one thing here, I've been bugged a little bit ~~some of it~~
~~some of it~~. You get a amplification ~~application~~ factor of 1.266 -- ~~Leonard~~ Kangel,
what did you get? (voice I got .1 or ----) and (voice 1.6)
Yea, and I was out of the room, I did't ~~xxxx~~ hear you
(voice, or 2.11 under the web -----and 1.66 at the center of the ~~---~~ the girder -which
almost exactly ~~----~~ checks out) you got 1.66. They got 1.26. So we have
~~(voice — we arbitrate this)~~ ~~(Well, I think)~~ Well I don't
~~think it's (voice~~ - do you ask ten other people, you get 10
other answers)--(voice - we've established one thing, there
is a stress raiser ------ of course, we might have to -------.
So then the only condition you have put then is what boundary
condition --- solve it ----if you feel then at that point the
metal started to rotate, you indicate certain stresses ----------
we can isolate any area ----stresses right now if you let
the structures be analyzed. -----splice area ------)
EDWARDS - ~~Not necessarily, all~~. Now, to carry this on, still
in spite of all the analyses, we're more or less in a position
of a guy who called his lawyer and said they can't arrest me
for what I did, but I'm calling you from the jail. Regard-
less of the arithmetic, we do have a fractured girder. There
are several points that everybody has discussed but nobody
has yet come up with a simple answer of what why are we in
jail, why did we goof and from our standpoint, this is the

prime situation that we are in. It did fail. I have ordered erection stopped of the similar pieces on the other side. In view of the some of the things that have happened in the past, the Silver Point Bridge, for one; the John Day Bridge, for another, and this is close to home, it shouldn't have fallen down, but it did, I'm not willing to go ahead and put this bridge up. All of the tests on the metal would indicate that the metal did pass the specifications. The specifications we had on it. and we have no way of knowing what the condition of the metal is in the other three joints ~~of this~~ similar to this one in the bridge, but I think that any further wrestling over the arithmetic is probably ~~no about as~~ is not germane to the issue ~~xx~~ here. ~~The~~ There are several things, for instance, in my mind with respect to the method of erection. This is a very frail, limber, thing and looking at it in one way, when you let that thing down, you introduce a stress and we've ~~xxx~~ got some data here that would indicate that the two girders ----- this data's taken after on the elevations. A one piece that did not fracture and an almost straight profile across its back with a distinct change in direction at Panel Point , the next panel point beyond the ?--- girder, even to the point that I wondered if there was some slippage in the splice. It seems like this is awful stiff and it seems on the matter of judgment that when this thing was let down to stress it,knowing that the one end of it ~~xxx~~ sits on stilts and the other end is in a rocker, the only two places in this

structure that were retaining the shape of the frame is this joint and the joint at the far end and I still am of the opinion that this has not been properly analyzed and that something has to be done about the joint before we proceed, put it up there, open it to traffic and put people on it. I would ask you, Al, if you have any thoughts of the matter of this joint.

(voice, Well, we have found the you mean on the junction point on ----) EDWARDS - On the what the crack should be (voice, ---- we have been there some previous analysis ----- tests, but we have started working on another ---- concentrated on this lengthy and concentrated type of ------- application on the junction piece We haven't ---------)

EDWARDS: Would you say at this point that it's safe to proceed with this thing, with this design, or should it be revised.

(Headline) (voice - We have n't attempted to answer that ---- at all There are a number of things we don't know ---------- physical condition of all the other pieces --------for a while we weren't aware of this particular junction having something wrong with it before it was erected. Having not seen what happened — at the bridge site when it was done, but I feel that there's something in the elements that we're talking about that ----- excuse me, and I'm speaking of the metallurgical ------ aspects -- and the subsequent weld

END, TAPE 4, Side 1

MR. EDWARDS: how the joints should be revised. I think I've got to state my position that I did ~~it~~ in the opening, that you can't arrest me for that, but I've been jailed. I think the failure here, admittedly, the material was not ductile as ~~supple~~ as it should have been and it has cast enough doubt in my mind that I don't want any more part of ~~it~~ this joint. I want something that is absolutely fail-safe. Its a nice detail and ~~xxxfxxxh~~ whatnot, and so forth, but it did fracture and ~~the~~ you have to recognize the practicalities of the situation that the material was produced, put in the bridge, there were some errors of omission in not requiring that it be put in ~~parallel~~, with the grain parallel to the direction of stress, but nevertheless, it wasn't and neither of the other three joints, to the best of my knowledge, have made any difference; and the failure of one under a load which, by the way, will be repeated every day for a condition here by reason of this having two big shoes. There will be movements and change in stress in this joint every day of the year for the next fifty years. And I, particularly after looking at the profiles of the tops of the beams after the fracture occurred, I think the thing is just too cottonpicking stiff. I think there is a stress here, I've never have been satisfied and I'm sure you know it worries me, I've done this many times for everybody. But you have this beam sitting here, actually its not level, its uphill and your arch coming down here and at the time this was let down, this assumed a (kind of exaggerated up there) this end of ~~it~~ it sits on a stilt, there's no

fixity there, and the only solid points in this frame are that joint there and that joint there. To magnify, this is your (not embellished,) this is your bottom flange, this is your box and I still think there's a pressure here, a longitudinal force that nobody's taken into account which tends to change that angle and let a hell of a shear right there at that point and if you remember the pictures of the original break do you have them here, Walter?

(no, I haven't)

-------but if I remember, the pictures of the original break, there was an offsetting there of how much was it?

(about an eighth, wasn't it Bob? about an eighth.)

(about an eighth.)

------shear there that hasn't been taken into account and (about an eighth) about an eighth of an inch. Even with the fracture going only part way up the beam, it's just an eighth of an inch offset there. So, for these reasons, I think it -- necessary at this time, that we want to get everybody here and check their arithmetic. But the, like I say, I think there's things here that haven't been threshed out. Again, and I don't think that force on the heel of that arch where it comes against that bottom flange is resisting the horizontal thrust ----that comes on this structure, has been properly taken into account.

(voices too faint)

Voice: I feel that we are somewhat obligated to have his recommendation ---------- I think you will recognize that we have some people --------- this problem -----are requesting that -----

MR. EDWARDS _ I might say that our crew in shop, Jerry, have prepared two alternate designs and Bob Cunningham and his boys have prepared an alternate design for this joint and I would .... would you be willing to [redacted] give us an alternate design.

Voice: Well, I think you already have an alternate design. ---------

MR. EDWARDS - Yes, we do. But I, again, I am not quite satisfied with it, I wish you would look at it again [redacted] when you get home and within a very few days give me your analysis if you want to stay with it or [redacted] try something else.

(unintelligible)

MR. JOHNSON: Tom, I'd like to, following Bob's comments, I'd just like to interject this one thought that is [redacted] we've arrived at where all the approach work is done, and can't can proceed farther on that, the only thing we can do is the main span, which is being assembled someplace else, we'll have a lot of equipment standing around doing nothing.

MR. EDWARDS: [redacted] one of our Salutsmen, I think this was -- was Cunningham's --- was to carry this thing on through like it is over at the other joint where the arch goes up and goes through off of the main span. This was Cunningham's proposal. One of our proposals

is a gusset plate a pinned joint, which is necessary attached to it and what was the third one, Jerry?

(voice) ----- Bolted joint.

Oh, yeah. The third one was a bolted connection whereby the arch as it comes through would be welded to a plate and this thing lifted up here. ----- that's right. Due to the of course, me being particularly uninhibited with any specific knowledge, I kind of prefer the pin myself.

(voice) --- that's changing all your stresses.

MR. EDWARDS - I know it does; I suppose it probably would

(voice) - ----activate it ----- tie girder --

MR. EDWARDS _ Here is the (voice - these are just roughs) Here are the stiffeners, taking the thing, and this, though, ----- yes, you may. And you have an extra set of these to give to Ed? This one I'm a little afraid of because it still has that heel of that thing flying up there every five minutes.

Stresses change this; here is the bolted joint; and -------

(voice) find a little objection to a pin connection because you've got a heavy flange member with light weight web ---------somewhere back in the rib flange back into the heavy web connection this really have to reinforce ------throwing away a whole lot of your structure.

MR. EDWARDS - Could be, but for my money the weight of that horrible stress that comes right in there at the heel of that arch where it lays against that bottom flange when the main girder takes a deflection.

(voice) - this alternate takes the stress out of the the girder

----

(voice) the original detail? ----- SK1, SK1, is it (yes) SK1, 2 I think you have one, I don't think you have two, 3 and 4 ---- (we don't have that) No. I think you have SK 1 which is

END - Tape 5, Side 1

(Jumble of voices, laughter - indistinct)

That's ~~when~~ the one you showed us last week just a sketch form increase the radius, and transfer up into the web. (another voice - indistinct)

MR. EDWARDS: Well, to bring this part of it down to the finale, I think the thing that I need to know, first, I've got to state my position again -- I'm not going to proceed ~~in/with~~ with this design. I'm not ~~going/to~~ willing to accept the fact that it's all in the material. This is a rather exotic type thing, probably, possibly might not have happened if ~~it~~ this would have been a standard erection procedure. I don't think the erection procedure chosen was capricious because of the horrible, horrible work ~~condition~~ ~~I don't know how about this, but,~~ Anyway, we've got to face up to the practicalities. ~~find~~ ~~redesign~~ (We designed - or) the joint; admittedly there has been some shortcomings in putting the steel in adverse to the direction of rolling, but nevertheless, you've got to face up to the practicalities of buying steel, getting it fabricated, getting it into a job. This one has failed and I've got no faith in the other three and I don't think, in the position that any of us are in, that we can open that thing and put people up there on it unless something has been done. I hate to judge it unfairly, but I don't believe so. I made this vow several years ago -- that no bridge ~~is im-~~portant ~~is~~ going to be put up that is not absolutely safe. Now and until forever. So, I would ask you Mr. Hedefine, to review this joint detail and give us a recommendation again

pointing out Jack's (Wilkes) position that we're not at this moment trying to assess liabilities; we'll have to get into this as a separate item of business. The chips will have to fall where they will. I think Leonard probably will be into this and Barry (Rutledge) in the end. I'd like you (Medalfine) to review both, both your firm and you, Ed (Johnsen) to review each others work and review our work and come up with a recommendation and what would be a reasonable time? To give an answer. How many days would you require?

Ed Johnsen: To review these finite analyses, Tom?

MR. EDWARDS: No, to review the joint details.

Ed Johnsen (voice): Oh, a couple weeks ---- I would think a couple of weeks would be sufficient.

MR. EDWARDS: Would you give us an indication, Roy, in a couple weeks, if you had all three of them, theirs, and ours. (indicated HNTB & PB&D)

Roy Tokarud (voice) - Oh, I think so.

Mr Edwards (voice) what would be a reasonable time, (To Ed. Johnsen)

Ed Johnsen (voice): Oh, I would say no less than that -- we'll try to shorten it up any way we can.

MR. EDWARDS: It's getting highly critical, it takes a long time to go through the -- metallurgy and the contractors is continually writing us letters and saying "you're holding me up" and we've got 15 to 20 thousand dollars worth of equipment here standing around; 15 to 20 thousand dollars worth of rental per day" and maybe you jack it up higher than that -- do you have any idea, Bob.

(voice) No -- roughly, we're talking somewhere in the neighborhood of150 to 200 thousand per month. At the present time I see that

he will have to start to work at least by May 1 on the east back span, or he'll be shut down completely, until ---- (voices- indistinct) ?

MR. EDWARDS: Well, I was going to get this ---- Bob, Roy and Herb and Jack and I get together with Walt and Al --- and have a discussion among ourselves.

Well, as of this time in the way of proceeding, we have our joint detail, you have ----(voices, indistinct) well you have the details of the --------joint, you don't have the ----build the web span/(voice - That's SK2, 3, 4. Yeah, will do.)
MR. EDWARDS - We'll get those to you.
Voice - That'll be in the mail tonight.

voices - indistinct

Voice - Have I heard you correctly that ----nature of the steel, ---not pulling out pieces made---more or less ---the junction steel crack ----would not progress beyond that. In this particular piece of steel we're talking about here, did this steel act the way you'd normally expect it to act? Harry C.: - Well, I would expect this piece of steel to act exactly that way. I would expect it to Break. this piece of steel would not be more ductile. But I would expect A588. the alternate beams to hold more. I would expect --A588 to have to have good plastic --- natural toughness ---------- and always absorb energy. ----------

We've always been -----

Voice - say that it acted any differently than you would expect under the -------that we were expecting----how come the

one on the other side didn't break?

voice - A very pertinent question, and the only answer I have --- is that it did, a heckofalot earlier and that merely proves that the crack ought to be replaced ----weld material. Now this is a good point --- if it didn't fail where it did, where should it have failed next. If it was overloaded, where would you expect to fail next. Now, you look at this thing and you notice that/a you have unpieced -----area of the weld and here's a little cone (crumble?) ---area in the weld. It was the weld level that was shriveled but hasn't fractured. (jumbled voices) ---- So, the, you said why didn't the -----had failed only from -- that's right. -----Even lower, load, at that time, it had an additional stress concentrated -- it had sharp corners there --------plus the fact that ---- now, it might have that weld material has been replaced with ---------- weld material that we' haven't run all the weld material properties -----but it seems to be exhibiting more fracture ----than the weld level itself ------indicate high density -----.

If I can go quickly back over these fractures because as I say, these ------are the ones we're concerned with consists of both temperatures ------I did not feel that in this instance, it was just a drop in temperature that was responsible, just the loading -----temperature ---------might strain------- We thought the high strain was -------steel dynamics------- shock of dropping a load or ballistics. Biaxial or triaxial weld-have those in that area----notch of that kind and lamination ----?

~~with the lamination~~ ----biaxial stress ---and you have a biaxial stress condition at the impact line.-----So then, residual stress ---youhave to have residual stress, the question is, how much. ----So far, my feeling is that 10,000 psi is ------we have loads that say 40psi, 40 psi right in the--- (voice) - One thing that I might make clear here is that the bottom arch rib connection, as a unit, was welded on that girder the last thing. So that all of the longitudinal welding of the webs near the bottom flange coming right up to that point were welded on./ There was no stress relieving after that. ------- tremendously great --- web at the time that the arch girder was welded on. There had to be some residual stress at this--- (voice) It had to

(jumble of voices)

Voice - It could have the opposite effect -----(voice - indistinct)

However, the fact is, ------

(End Tape 5, side 2)

Voice - -----based on what ----- I -----Let's put down now, that the radius ----design. Now, whether the steel happened to allow -------

MR. EDWARDS: For the design selected and so forth. Now, I still have got a fixation, Bob, simpson in that that fractured piece has got to come out.

(voice) - Well, I don't think we want to get in there right now, but I'll, from my point of view, I'll agree with you.

MR. EDWARDS: I think that considerable of it can be salvaged the fractured machined piece has got to come out and make another piece a little bit longer put it on back of the weld on both sides and sever it from the girder or the web and you'll have to sections of the web out and reweld them

That's my second point, Tom and itmore than supposed

(voice) - - I think we're in --- that this /to be piece of steel, we'll want to see from the top fracture ----New it's Herb's thought is that, is------holding back the money.

-----it is unsatisfactory --- agree completely---steel in this thing - is not satisfactory -- and it has to come out. Now it is Herb's deferred payment (penalty)
thought is in and I presume that this is will result in holding back some money. Is that right?

(voices- unintelligible)

MR. EDWARDS: Until all the terms of his contract ----

(voice) - All the terms of his contract---well, I'm not satisfied that ------has fulfilled everything that their supposed to. Wouldn't there be some responsibility in connection with use of this steel there.

(voice) In terms of what?

(voice) - In terms of correction (erection) of this---

(voice) - No ---

MR. EDWARDS _ No - I don't think so. Really, the only possibility that the only thing that I feel is that (or appeal to Pittsburg about) is that overheating, the preheating that they - this is what we have them hired for was to pre-season?

(voice) What I'm getting at is the furnishing, was the direction of the steel hard enough at the other end so that it wrinkled this way ---inaudible

MR. EDWARDS: Well, we're beyond that point Bob, in that we'd we've paid them and have to sue them. I wouldn't be above doing this. I'm not --

(voice) - Paid PBQ&D, too.

MR. EDWARDS: PBQ&D have not been paid their full monies.

(voice) - Now, we're down to this matter of requisition Bent 2 ----a year beyond -- time-- supposed

(voice) a year and a half at least

(voice - Year and a half. We're talking about 3/4 of a million dollars

MR. EDWARDS - 400 days would be $600,000.

(voice) - Well, the ripple effect/xxxxxxxxx thing if --- we're talking about in this don't charge anything and if we can raise and redo the joints-- I have one hell of a hard time to figure out how you can escape one when you breathe the other.

MR. EDWARDS - This, unfortunately, there is two things involved here; Number 1, quite obviously, we are going to thresh this out

in court. And I'll have -- Several years ago I did quite a bit of research on liquidated damages and never had faith in collecting anything except a punitive amount in any way, shape or form. I did a lot of work on it, Leonard did a lot of work ~~xxxxxxx~~ for me. The Legal Section of AASHO all threshed it out; the basic principle that I arrived at always comes down to this that if any damages become liquidated damages become so high as to be in the nature of a penalty, the courts will not enforce them and will remand them in every case. I would guess in this case that 6 or 7 hundred thousand dollars would put us in that class; what do you think, Leonard?

(voice) Well, yes, I have some thoughts ----Particularly, do I think that you've got to be very careful about if we attest that the design of that arch joint was no good, then I'm afraid ----liquidated damages-----contractor---say that the arch joint is no good and still it meets specifications.

MR. EDWARDS: This is the horrible hole that we're working out of, that

(voice) well----this adds up to just one thing--- ~~in~~ in my book and you may not want to hear it but I've got to say it ---examine the position of errors -----I don't think that we can escape it in any other way and the mistake is already made --point that out. It doesn't make sense to collect liquidated damages, against the contractor ?
(assess the cost factor) go to court and be boxed (bopped?).
both
I think we'd/be better off in any way we look at it if we
through contractor
can resolve the ---~~[illegible]~~ before we have to go and

go to court. Now, what would happen if we said to him, we're going to redesign the joint which failed --this has failed --- and take it after that --- to get you back to where you'd been if it had not been a failure. In other words, would you have got your work done, proceeding as though there was nothing there affecting this joint. We'll charge him then on progress thereafter, but until he does this, we'll say to him, enter into agreement, there'll be no liquidated damages except to the extent of the work that you do in completeng the contract beyond the section of the joint.

(voice) Oh, definitely, definitely.

(voice) Sure.

MR. EDWARDS: When he gets back to the point that he can proceed, then you damnwell betcha we'll collect liquidated ----

(voice) ----all choices, you see, what incentive is there for him to proceed expeditiously other than to build up a claim against us. With equipment around. He could drag his feet on this thing and kill us all. -------

(voice) - Great

(voice) - Yeah, timewise, he is -----assembly of the main span without assuming the ------ we stop charging him days, or fractions of days

(voice) the value of that, In connection with the total value of the job and the time and the ----- that's the only part we"ll be charging. All of the other time, we will not charge

MR. EDWARDS: Well, I would

(voice) --

MR. EDWARDS: I would try it on for size, Bob, to get the counsel of the people who are involved in the construction. ----first, we've got to get the redesign of the joint. Find out how much of a chore this is. If he's got to go to the factory and get materials and get it shipped and all this kind of crud, we're involved in quite a little bit of time; but and he's got some responsibility in this, and I dont think he quite sees it---scotfree, because the minute we started making tests

(voice) - we ran tensile tests

MR. EDWARDS: It went about like this - I discovered somebody running into the Lab up here and told them to kick his ***** out of there and then they started calling me up. This fellow's boss, in San Francisco called me up. He wanted to get into the Lab and observe these tests and I said no. And then the guy's boss in Pittsburg called me up and I said no. And then the president of the United States Steel called me up and I said No, this is a , the contractor has elected to get some privileged information on his side, so this is privileged to us -- you stay out of there. Then, his attorney called up and cried and asked if he could talk to our attorney, and I said sure, go ahead, talk to him if you want to; I remind you of something, though, he works for me and if he tells you anything different than he has told me, there's going to be fur flying around here and finally, they gave up. But

the whole thing, and I finally got to the bottom of it, in discussing with his attorney, he had notified U.S. Steel (the contractor, that is) that he was going to hold them responsible for this failure. So I don't think he thinks he's clear in the matter.

(voice) - I agree wholeheartedly in that.

(voice) -- but i'm thinking about -- do that, the reasons are this takes a lot of time
if ~~you/take/time/~~ and there's other work he could do
he'll because he figures he can
~~you~~ maybe drop that, ~~pressing~~--collect standby, cost of equipment and a lot of it. Some incentive in that ----

MR. EDWARDS: Well,

(voice) Along that line, can I get in here; if we had an answer today, he'll still face a shutdown, closing his entire operation before we can redo the three girders and get him going on the inside. It will be just as tough because we're talking about 90 days ~~from~~ for material out of the steel mill and I don't see of any way of working with this joint without going back to the steel mills for ---- If we were to ~~do~~ go on maximum, expedited operation, it's conceivable that we could rebuild, say the bottom six feet of those four girders and jack that span in November and have the bridge ready for serv ice ---- in ---- or May. That would be as fast as it could be done. Now, he won't have any other work to do.

(end Tape 6, Side 2.)

Voice - In the reading of the specs and so forth, do you get an inference of ~~Notch-Tuffner's(?)~~... notch toughness... that we asked for.

Voice - Did I make it clear that...yes, and the way the some of the different voice specs read...average 15 have no../and the longitudinal direction I think they all pass. As far as being rated...

Voice - ...specs, they were all right.

Voice - statement...I don't want to try any case ...but we are entitled to know what's going on, I guess from the advice Harry gives us ~~that-the~~ and from the...what judgment I've got to go on ahead with this design as it is,...just as well... What's more, the contractor ...very shortly...I would propose to give it ~~all-that-~~ on that basis.

No. 1. The metal may have met specification

No. 2. The metalergy in case mature method of fabrication may have left something to be desired.

No. 3. We are going to redesign the joint.

No. 4. What is the...after...three months ago for a method of removing this fracture piece. What is your method for doing that?

No. 5. We're going to redesign this joint and we will give you the answer in two to three weeks.

Now, none of this will bear on the responsibility which is going to come up for you quick on that last one. Murphy Pacific. For openers

Edwards - I would take the stance that the removing of this fractured piece is up to him. We would not attempt to place on his back the cost of revision of the joint and; four points--is anybody writing these down? I think there were number 4, number 5--faces with the needed...time extension necessary and I would have to recommend that he be relieved of the liquidated damages from the time of the crack up until the time we give him a revised joint. He's immediately going to say, that it will take time to secure steel and fabricate it and he ought to have time too.

Metal in the girders, we'll let him salvage that as much as can be salvaged, use as much of it as we can, in the revised joint.

Does anybody have any other suggestions up to this point? Propose at the moment to ignore it. He has some responsibility in this in that while the metal barely meets the specs, there is indication that it wasn't properly fabricated and I think this is on his back and if he claims stand by equipment time, he will have to sue us for it. Do you have any...this is an outline of how I propose to go. Have you got any counsel to give me, any info?

Voice - Yes, take one of these...possibility all the material may...

Voice - ...material in the fabrication is...the big element...in his performance.

Edwards - Obviously, he put them in crossways because he was saving material by doing this.

Voice - Yes. He...why...inconsistent... he may not have to pick up any of the cost of the...

Edwards - I don't think so, Barry. Now we approved the design, left-handedly, those god damned plans have got my name on them, I think. Although I haven't looked to be sure, but we had a consultant who was our agent in the matter and he did not prevent him from putting this thing in crossways. Everybody says, "Oh Hell, everybody knows you don't put steel in crossways of the grain," but this isn't 100 percent true by a long ways because splice plates and things like this are almost universal. crossways.

Voice - Well that might be acceptable ..., but he has a responsibility in this,not necessarily en...statement in the investigation of design. ...consultant...

Edwards - We're still holding $20,000 of the consultant's..money

Voice - It's alittle over 20,000

Voice - Let me ask a question here. If the existing members of the... utilized in some fashion as they stand right now, what we have right now is inadequate in the one member. Would you propose to have him put that one ~~number~~ member back in total...with the other three ~~numbers~~ members for before any revisions are made?

Voice - Yes, I would.

Edwards - Except the possibility maybe of ... upon the redesigned joint. I would expect him to furnish me a girder with a nonfractured bottom flange and ~~not~~ nonfractured width, which brings us back to that point. Then depending upon the type of redesign ~~y~~ we select, would be a point of some further negotiaiton right there.

Voice - What we have here is the fact the bridge is probably getting back to where it is as far as damages are concerned or putting you on the docket ~~proving that~~ really it is his responsibility, not yours. I wonder why we find ~~put~~ ourselves in a bit of a... behind the eight ball...make this approach concerning his liquidated damages- erasing his liquidated damages from the date the crack occurred.

Voice - He was able to operate in some other area, Of course ~~it's~~-a it ~~bit-off~~ through him off his schedule./.whatever it is. PPM or

Voice - Well his PPM, of course, went to hell in a hand basket, right after he started to work. His prognostication was that he put the west back span together in two months and it took him six.

Voice - That was no fault of his.

Voice - No, no. ...curse. As a matter of fact, he wasn't, didn't have it done when the fracture occurred. This lowering of this thing at the time that he did was to hit the north end of that thing before he bolted the deck plate on to get a pre-stress

Voice - condition in that the last two panels of deck plate before he started the rest of the main span. It's right when he was going through this maneuver ~~doing ..... work to ... was going~~ to lock this thing like this- - thing this/up in a curve. It won't ..... This was part of the maneuver; it was right at that point--

Voice - and up to that point, he had never been ... or hampered one bit and he was four months behind schedule at that time.

Voice - girder...rewelded...

Voice - that was on the bars

Voice - Can you answer that, Walt?

Voice - ...claim on that one.I don't think Anderson claimed time on it. Yeah, but as far as a monetary claim, there has been no claim. That was one of the items in his time extension request.

Voice - Was he granted any time available...

Voice - We have only granted him a minor amount of time... unworkable ~~weather~~, I don't know how to say this, weather, in other words the weather was--working conditions were not safe We had given him ...

Voice - If we give him time..it can only run through another month...

Voice - We got to face up to another time extension.

Voice - ...My only point is once you start backing up to when this thing cracked, take out stand-by time for his equipment, repair...

Voice - ...I don't know. Maybe the legal people here will have some-thing...

NOTES TAKEN BY A. E. JOHNSON
AFTER TAPES RAN OUT
MEETING RE FREMONT BRIDGE FRACTURE
February 29, 1972

Roy Tokerud and J. Wilkes suggested negotiating a price agreement including time adjustment. Include time from cracking of beam to now.

Tom feels time after correcting joints to completion is on the contractor.

Tom mentioned problem of shoes being a horrendous problem and we are faced with the problem of a time extension in regard to this.

Feds agree to Tom Edwards negotiating with contractor for a price agreement covering all facets, including any liability on the part of the contractor.

Jack Wilkes suggested working up a liability chart:

	Contractor			Owner		
	Mill	Fabricator	Erector	Consultant	Hwy. Div.	FHWA
Materials	X	X		X	X	
Specs.				X	X	X
Design				X		
Construc.		X	X			

We will await a redesign. In meantime, do our homework and work out chart. Will give redesign to Feds (Roy Tokerud).

Bob Simpson will go along with Administration action to suspend assessments of liquidated damages without any commitment as to responsibility or liability.

Contractor's new superintendent has asked to be in on redesign (if done) because of his background of designing and availability of material, etc.

Contractor has been instructed to investigate availability of material and his plan of replacing joint and this should be first order of business.

Bob Cunningham asked to arrange date with Tokerud and Tom Edwards.

#####

AEJ:ja

March 7, 1972

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THE OREGON JOURNAL, MONDAY, FEBRUARY 28, 1972

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Fremont Span Fracture Sessio

By DICK JOHNSON
Journal Staff Writer

Veteran construction watchers are agreed — it could be a sidewalk superintendents' Disneyland — the day the builders place the gigantic 986-foot center span in the Fremont Bridge.

Engineers, however, are not sure just when the great day will arrive.

It was once indicated that the center span might be put into position in the spring. That time frame, however, has apparently gone into limbo.

TOM EDWARDS, state highway engineer, said Friday that engineers and consulting firms are going to have a slide rule session Tuesday at the highway metro offices in Portland to probe further into what caused a fracture in a main horizontal support beam of the westerly backspan of the bridge last autumn. The fracture is about 135 feet from the shoreside of the southwest end of the backspan.

An engineer in Portland said there is no desire to put the center span in place without knowing what caused the backspan crack.

ASSEMBLY of the center span is progressing at Swan Island. Edwards said Friday the center span construction is about half completed.

When completed and all else is ready, the center span — weighing in the neighborhood of 6,000 tons — will be floated upriver by means of barges to the bridge which will link the Minnesota and Stadium ways. Then it will be some 175 feet into plac means of huge hydraulic j

The center span's parts, ricated in Richmond, C are being assembled at S Island because of lack of

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THE OREGON JOURNAL, MONDAY, FEBRUARY 28, 1972

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Journal Staff Writer

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The center span's parts, fabricated in Richmond, Calif., are being assembled at Swan Island because of lack of suffi-

Set

cient on-site working area at the bridge site.

AS FOR the meeting Tuesday, Edwards said it will be "highly technical." He indicated the session would be closed but that a statement would be issued afterward.

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TO: State of Oregon
Department of Transportation
Attention: Mr. Walter J. Hart,
Bridge Engineer
State Highway Building
Salem, Oregon 97310

CLIENT NO.

REFERENCE NO. 709015 (705062)

DATE: 2-25-72

SUBJECT: INVESTIGATION OF IN-CONSTRUCTION CRACK IN GIRDER TRUSS JOINT AREA; FREMONT BRIDGE.

Memorandum Report 2-25-72;
Biweekly Work Report Summary.

from Harry Czyzewski, P.E.
Projects Director

The following items, as numbered on page 2, especially were pursued during this two-week period.

1.1 Determine cause(s) of cracks in structure:

1.2 Determine and identify cause(s) with respect to original material quality and subsequent fabrication procedures; and establish whether these were in any way defective such as to be a significant factor in the fractures:

1.3 Determine properties of steels and of weld-joints to serve as a basis for repair and/or correction of cracks and potential defects:

Integrate west-side junction-coupon results into earlier findings, in preparation of Report II.

1.5.2(.1) Photographic Record:
We made additional photography of the condition of the coupons.

1.5.3(.5) Ultrasonic Inspection:
Checked separate coupon of A588 steel in our laboratory by ultrasonic methods.

1.5.4.1 Metallurgical:
(.2) Macro:] Checked for heat-affected zone and laminar type
(.3) Metallographic:] cracking details.

1.5.4.3 Physical Tests:
(.2) Static:
(.3) Dynamic:
Machining for tests of separate coupon of A588 steel.

NOTED
A. E. JOHNSON

We submitted, for your approval, invoice based on this biweekly accumulation of time, using our standard fee schedule procedure, per our contract.

HC:hg

cc: R. O. Cunningham
Ed L. Hardt

Copies: TE
AEJ
LLW
IDM
FHWA
3 to include with invoices.

c/601

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STATE HIGHWAY ENGINEER

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Item	Description
* 1.1	Determine cause(s) of cracks in structure. (Div. M)
* 1.2	Determine and identify cause(s) with respect to original material quality and subsequent fabrication procedures; and establish whether there were in any way defective such as to be a significant factor in the fractures.
* 1.3	Determine properties of steels and of weld-joints to serve as a basis for repair and/or correction of cracks and potential defects.
1.4	Sample and trepan, as needed, to establish the above. (Div. W)
1.5	Specific phases of investigation, including the following.
.1	History of: (Div. M)
	(.1) Operation
	(.2) Construction
	(.3) Failure
.2	Record of "As-Received" Condition: (Div. M)
*	(.1) Photography
	(.2) Sketch
	(.3) Write-up
.3	Flaw-Detection-Inspection (Div. F)
	(.1) Visual
	(.2) Magnetic Particle Inspection
*	(.5) Ultrasonic
	(.4) Radiography
.4.1	Metallurgical: (Div. Y)
	(.1) Fractography
*	(.2) Macro
*	(.3) Metallographic
	(.4) Microhardness
	(.5) Chemical (Div. A-B)
.2	
	(.1) EMP
	(.2) EM Scan
.3	Physical Tests: (Div. X[machining Div. W])
	(.1) Hardness
*	(.2) Static - machining*- Test for tensile and bend properties
*	(.3) Dynamic - machining*, Cold bath set-up; Test for Charpy properties
	(.5) Fracture Toughness, machining; Cold Bath set-up, test for fracture properties.
.5.1	Load: (Div. I)
	(.1) Calculation, Fracture Mechanics
.2	Experimental Stress Determination: (Div. Z)
	(.1) Mechanical
	(.2) Pnoto Elastic
	(.3) Strain Gage

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(*) Items on which MEI spent significant time during this two-week interval. See page 1.

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OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

February 25, 1972
Salem, Oregon

To:
Mr. Vernon E. Skoog
Controller
Accounting Section
B U I L D I N G

Attention: Mr. Paul Hatcher

SUBJECT:
Fremont Superstructure
Contract 7276
Inspection Agreement with
Pittsburgh Testing Laboratory

cy mailed 2-28-72

Attached is the final approved Invoice No. P-10-2 for work done by Pittsburgh Testing Laboratory in conjunction with the inspection of structural steel on the above project. All work under this agreement, including submittal of required reports, has been accomplished in a manner satisfactory to the State.

Walter J. Hart
Bridge Engineer

RJW/ag

Attach.

cc: A. E. Johnson
Ed Hardt
R. Cunningham
J. Jenkins

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STATE HIGHWAY ENGINEER

NOTED
A. E. JOHNSON

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FEB 22 1972
FOR FILING

2-18-72

I-405-8(13)303
7276

western union **Telegram**

717A PST FEB 18 72 LA004
SPE012 SSH708 L FFC025 (AT 049FF331025)PD IPMEHNA NYK
0424P EST02/18/72
ZCZC 017 CB PDB CH NEW YORK NY 17 418P EST

MR TOM EDWARDS, STATE HIGHWAY ENGINEER
DEPT OF TRANSPORTATION HIGHWAY BLDG SALEM ORG
BT
RECEIVED YOUR TELEGRAM OF FEBRUARY 16. PLEASE REST ASSURED
THAT WE ARE EXPEDITING THE ANALYSIS
OF JUNCTION PIECE AS FAST AS IT IS HUMANLY AND PHYSICALLY
POSSIBLE. WE ARE WAITING FOR AND EXPECT COMPUTER RESULTS MOMENTARILY.

LOU SILANO AND WALTER HART HAD TELEPHONE CONVERSATION ON THE
MATTER AT ABOUT 3:30 OR 4 PM YESTERDAY FEBRUARY 16, EASTERN
STANDARD TIME.

NOTE:
JOM EDWARDS

cy Johnson
Walt Hart
J. Nel

Fremont
Bridge Junction
Contract 7276

OF-1201 (R5-69)

OF-1201 (R5-69)

C- 52454 9

western union

Telegram

ALFRED HEDEFINE

NNNN(0113A EST)

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OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon
February 17, 1972

I-405-8(17)303
7276

To: Memo to the File

SUBJECT: Fremont Bridge Superstructure
Stadium Freeway
Contract No. 7276

Meeting at MEI Laboratory

CY Pearl 2.22.72

L

On Feb. 14, 1972 a meeting was held at Metalurgical Engineers Inc. laboratory in Portland.

Those in attendance were:

Tom Edwards	O.S.H.D.
A.E. Johnson	"
Walt Hart	"
Scott Coulter	"
Ed Hardt	"
Bob Cunningham	"
James Broad	"
Roy Tokrud	F.H.W.A.
Herb Schell	"
Herry Czyzewski	M.E.I.
Don Valley	"

NOTED
A. E. JOHNSON

Mr. Czyzewski confirmed the finding of report #1 showing a heat affected zone in the radius of the junction piece. He showed etched sections through the radius which showed the extent of the heat affected zone.

The results of the Charpy tests made on the large sample of the junction piece were shown. The large sample of the junction piece being that section which was removed from the center line of the girder toward panel point 0 and measured approximately seven inches by twelve inches. The Charpy tests confirmed the finding shown in report #1.

A sulfer print was shown and used to explain the difficulty of obtaining samples which are exact duplicates of previous samples. The " rim effect " of inclusions was shown on the sulfer print and

it was explained that samples are usually taken near the surface of the piece which cause them to be taken from relatively clean steel. It was further explained that due to the machining of the junction piece the rim of inclusions would at times appear on the surface of the junction piece.

The signficance of the load vs. time tests were explained. It was shown that test samples with low fracture toughness will fail before the material reaches the yield point. Such failure is depentent upon the flaw of critical size, temperature, time of load and other factors such as heat affected zones.

All of the tests appeared to comfirm the results of the tests which were made previously and are stated in report #1.

The possibility of discontinuing the State's policy of privileged information regarding the finds of Metalurgical Engineers Inc. was discussed. Mr. Czyzewski said that it was advantageous not to have people looking over his shoulder because their presence would delay the work. He stated that he saw no reason that the samples could not be made available to the contractor after he has completed his work. He further stated that the contractor should not be given a copy of M.E.I.'s report until he, the contractor, had agreed to write a report and furnish copies to the State. Mr. Edwards will make a decision in the near future concerning the continuance of the privileged information policy.

R.O. Cunningham
Resident Bridge Engineer

ROC:dgh

cc: all of the above

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STATE HIGHWAY ENGINEER

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OREGON STATE HIGHWAY DIVISION

MATERIALS SECTION
SALEM, OREGON 97310

I-405-3(4)203
7276

February 17, 1972

Mr. Ralph Mikus
Manager, San Francisco Branch
Pittsburgh Testing Laboratories
5514 Doyle Street
Oakland, California 94608

Fremont Bridge
Contract 7276

Dear Mr. Mikus:

This will confirm a telephone conversation I had with Ed Cockrill on February 16 in which I requested information on preheat applied in the fabrication of the 205 units. Our particular concern involves the amount of preheat used during the attachment of the A514 arch rib top flange to the A588 machined transition piece in the bottom flange of the tie girder 205GIL.

Mr. Cockrill states that in general "Tempilstiks" were used to determine minimum preheat temperatures and no maximum temperatures were determined. I am wondering if any of the parts in question were heated to redness and if so, would the color give an indication of temperature. Also, Mr. Cockrill mentioned a "T" shaped gas torch was used for preheating. Information on the fuel, number and size of flame holes, spacing and such might give some clue as to the heat output of the torch. Knowledge as to the approximate length of preheat time and the places of application might permit an estimate of temperature attained: ie, the torch was held for 5 minutes in the junction between the transition piece and the A514 top flange:

Any information you can furnish us would be most helpful in the analysis of the break in the girder.

Very truly yours,

George M. Baldwin
Administrator of Highways

by John C. Jenkins

John C. Jenkins
Engineer of Materials & Research

NOTED
A. E. JOHNSON

JCJ:bm
cc: Tom Edwards
A. E. Johnson
Walt Hart
H. S. Coulter
R. D. Cunningham
Don Scott

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FEB 1 7 1972
FOR FILING

I-405 8(17)303
7276

February 17, 1972

Mr. Jay P. Murphy, Project Sponsor
Murphy Pacific Enterprises
P. O. Box 4335 Bayshore Station
Oakland, CA 94623

Dear Mr. Murphy:

Re: Contract 7276
Fremont Bridge

Thank you for your February 11 letter indicating your completion of the study of erection procedures to remove and replace the fractured portion of the main girder on the Fremont structure.

As of this time, our design consultant, Parsons, Brinckerhoff, Quade & Douglas, has not completed finite analyses of the junction piece in question but continues to promise it to us momentarily. The special consultant, Howard, Needles, Tammen & Bergendoff, has completed studies, and our own inhouse studies have been completed.

We are planning a meeting with our consultants not later than the first week in March, and I will then contact you for a meeting to arrange for processing of the project.

Very truly yours,

George M. Baldwin
Administrator of Highways

By

Tom Edwards
State Highway Engineer

TEwm
cc Mr. Robert S. Lauter
Murphy Pacific Enterprises

Mr. Jack Gaur, Project Engineer
Murphy Pacific Enterprises
Portland
United Pacific Insurance Co.
General Insurance Co.
American Insurance Co.

bc George M. Baldwin
F. B. Kinbar
A. E. Johnson
W. J. Hart
H. S. Coulter, Attn Ed Hardt
R. O. Cunningham

MURPHY PACIFIC ENTERPRISES
4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

February 11, 1972

Oregon State Highway Division
Highway Building
Salem, Oregon 97310

Attention Mr. Tom Edwards
State Highway Engineer

Gentlemen:

Fremont Bridge - Stadium Freeway
Portland, Oregon

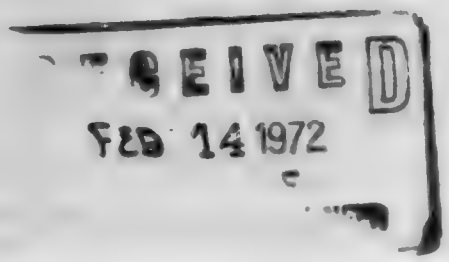
In reply to your letter of November 22, 1971, and confirming our several conferences (telephone and in person) regarding the Fremont fracture, we have completed our studies of the erection procedure to remove and replace the portion of the bridge involved. Prior to formal submission we are requesting a meeting with you.

It has been in excess of three months since the failure occurred on October 28, 1971. We have advised you of our expert's findings in which they are convinced that the erection procedures followed by us in no way caused or contributed to the failure. Additionally, our investigations confirm that our procurement of material and fabrication of same were well within the Specifications.

We are respectfully requesting that all work be held in abeyance until correction procedures are determined. During this time we will expect to be paid for the costs we are incurring. We will appreciate hearing from you promptly.

Very truly yours,

MURPHY PACIFIC ENTERPRISES



Jay P. Murphy
Project Sponsor

JPM:ch

TELEPHONE (415) 653-1717 • CABLE 'MYPAC' • MAILING ADDRESS P.O. BOX 4335 BAYSHORE STA., OAKLAND, CALIF. 94623

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FEB 17 1972
FOR FILING

I-405-8(17)303
7276

February 16, 1972

Oregon State Highway Commission

Gentlemen:

Request for Extension of Time
No. 10
February 22, 1972 meeting

Murphy Pacific Enterprises, contractor for the construction of the Fremont Bridge Superstructure on the Stadium Freeway, I-405, in Multnomah County, Contract 7276, has requested an additional 448 calendar days in which to complete the contract work without assessment of liquidated damages.

A tabulation of delays cited by the contractor as being beyond his control is as follows: Stiffener installation; Panel Point 3 revision; weld repair for Girder 205G1R; railroad restrictions; unsafe work days; labor strike; and production of fixed-shoe castings.

The contract was awarded on July 3, 1969, and allotted 880 calendar days to complete the work, which forecast a completion date of November 30, 1971. It is estimated that the work will be completed in 1973. This interim extension of time will prevent the current assessment of liquidated damages.

On January 20, 1972, verbal approval was received from the Chairman for a 31-day extension without assessment of liquidated damages for delays due to strikes, stiffener installation, railroad restrictions, and unsafe work days. This is a federal-aid project and we now have the concurrence of the Federal Highway Administration for an additional 78 days, which covers part of the delay associated with production of the fixed shoe castings for the project. This delay, caused by a search for a foundry capable of producing the castings after receipt of a revision letter by Murphy Pacific six days prior to the bid opening, added more stringent quality control requirements to the production of the castings.

I recommend that the contractor be granted a 78-day extension, in addition to the 31-day extension already approved, without assessment of liquidated damages.

This matter will be on the agenda for your consideration at the February 22 meeting.

Very truly yours,

George M. Baldwin
Administrator of Highways
By

Tom Edwards
State Highway Engineer

RJW:ag dh

cc Floyd Query
George M. Baldwin
F. B. Klaboe
A. E. Johnson
W. J. Hart
F. D. Morgan
L. H. Young
V. E. Skoog
H. S. Coulter
Gary Ross
Gary Sund

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

Box 300
Salem OR 97308

TO : Mr. George M. Baldwin, Administrator of Highways
Salem, Oregon

DATE: February 14, 1972

In reply refer to: 10-35-DA

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

Copy to Bridge Section
2-14-72

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure
Stadium Freeway
Contract Time Extension

Mr. Johnson's letter dated January 25 requests concurrence in a contract time extension of 417 days. This request deals specifically with shoe castings and is not associated with Panel Point 3 or Girder 205-GR-1.

One purpose for a revision letter in advance of bid opening is to alert all bidders of a change in order that consideration of such a change can be reflected in the bid. We agree that a change of the type involved with the castings was of such magnitude that bidders were not given sufficient time to locate suppliers that could meet the proposed construction schedule. Bidders supposedly did have time for price determinations upon which to base a bid and were afforded the opportunity to reflect possible schedule changes. Subsequent to Revision Letter No. 3 it was requested that the severity requirements be relaxed by mutual agreement in order to facilitate production. In order to define our position at that time, our agreement to relaxing these requirements was predicated on having any resultant monetary savings credited to the project. This attitude is documented in Mr. Merchant's January 7, 1970, letter to Parson, Brinckerhoff, Quade and Douglas.

The point is one of responsibility for the cause of the delays and, in this case, the associated costs that could be involved. Mr. Lindas quotes Section 8-8 of your 1964 Standard Specifications which would apply to plan changes after award of the contract. A revision letter before bid opening should be considered a part of the plans upon which contract agreement is made. The application of the doctrine of impossibility to the forging delays should be approached carefully since many other implications of responsibility could emerge from such an approach. I do not believe Mr. Lindas was made aware of all of the background data concerning Revision Letter 3 and subsequent correspondence and discussion.

(more)

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

Due to the special nature of the castings (massive size and X-ray quality requirements) it is reasonable to grant additional time for location and scheduling delivery from a supplier. For this reason we will concur in 78 days.

The time element associated with foundry production will be considered nonparticipating until such time as a more comprehensive analysis can be made of other ramifications involved. Some determination must be made as to what factors of responsibilities and associated costs are involved. A mutual discussion of this matter would seem warranted prior to further correspondence on this item.

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7276 Contractor Murphy Pacific Enterprises

Highway Stadium Freeway

Section Fremont Bridge Superstructure

Kind of Work Steel Superstructure

It is recommended that the request for increase in the number of workdays within which to complete said contract be ~~DENIED~~ or **GRANTED.** The reasons for such recommendation are as follows:

Grant 78 days due to a search for a fixed-shoe casting supplier without assessment of liquidated damages.

Recommended for Approval:

Edward Wahl
Assistant Division Engineer

Walter J. Grant
Construction Engineer or Bridge Engineer

M Klaboe
Dep
State Highway Engineer

State Printing 37000

Contract No.	7276
Project designation	Federal (I-405-8(17)303) State-Federal
Date awarded	7-3-69
Work started	8-11-70
Per cent completed	78% on 2-5-72 Date
No. of Workdays Allowed	~~885~~ 891 919
No. of Workdays Used	~~880~~ 841 on 2-5-72
No. of Added Workdays Requested	~~XX~~ 78

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon

Date January 24, , 19 72

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 860 days to 1308 days, within which to complete our Contract No. 7276, without the assessment of liquidated damages. The said contract is described as follows:

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

Please refer to attached report titled "Fremont Bridge Time Extension" dated October 26, 1971.

Respectfully submitted,

MURPHY PACIFIC ENTERPRISES
Contractor

By J. F. Murphy
President & Treasurer

BOND NO. 620402

CONSENT OF SURETY

Date JANUARY 26, , 19 72

We, GENERAL INSURANCE COMPANY OF AMERICA

, as

surety on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

P. W. Johnston

P. W. JOHNSTON Attorney-in-fact
450 SANSOME ST., SAN FRANCISCO, CA.

(SEAL)

Resident Agent

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BRIDGE DIVISION

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OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

February 16, 1972
Salem, Oregon

I-405-8(17)303
7276

SUBJECT:

cy Memo 2-18-72

To:

Mr. Robert Cunningham
Resident Bridge Engineer
P O Box 13160
Portland

Fremont Br. Superstructure
Stadium Freeway
Contract 7276
Information About X-ray Film

Your letter of January 10, 1972, requests detailed reports on the subject radiographs which were taken in California and recently transmitted to MEI.

We have checked our file and find nothing. The Lab reports similar results. As you surmised such reports apparently do not exist. The only reports we have are the routine periodic reports submitted by PTL during the steel fabrication period.

The accepted standards used by our personnel reviewing the x-rays are those contained in the Standard Specifications (1964 Edition), Sections 410-3.22 (409).

R. W. Ellison

R. W. Ellison
Bridge Administration Engineer

RWE/ag

cc: A. E. Johnson
H. S. Coulter
J. Jenkins

NOTED
A. E. JOHNSON

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OFFICE OF
STATE HIGHWAY ENGINEER

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FEB 9 1972

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OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

I-405-5(17)303
7276

Portland, Oregon
February 15, 1972

To: Walt Hart
Bridge Engineer

SUBJECT: Fremont Bridge Superstructure
Stadium Freeway
Contract No. 7276

Raising of Tie Girders

L

C4 Moore 2-18-72

Transmitted with this letter are the results of raising the North & South tie girders six inches at falsework 2W. This jacking operation was carried out in one inch increments alternating between the girders, and starting with the South girder.

The strain gauges were monitored after each one inch upward movement on the tie girder jacks. The actual girder movement being determined by elevations on the top deck.

Cross-sections through the portal and the deck profile grades represent the location of the structure after completion of the jacking operation. The air temperature throughout this operation was approximately 55°.

James A. Broad
Asst. Resident Bridge Engr.

JAB:dgh

cc: Edwards X
H.S. Coulter
Silano
Ed Johnson
file

NOTED
TOM EDWARDS

NOTED
A. E. JOHNSON

RECEIVED
FEB 16 1972
OFFICE OF
STATE HIGHWAY ENGINEER

OREGON STATE HIGHWAY DEPARTMENT

Job No. .....

Sheet ..... of ..... Sheets

Calculations for .....

Made by ....., 19.... Checked by ....., 19..... Backchecked by ....., 19.....

FREMONT BRIDGE

SUPERSTRUCTURE

STADIUM FREEWAY

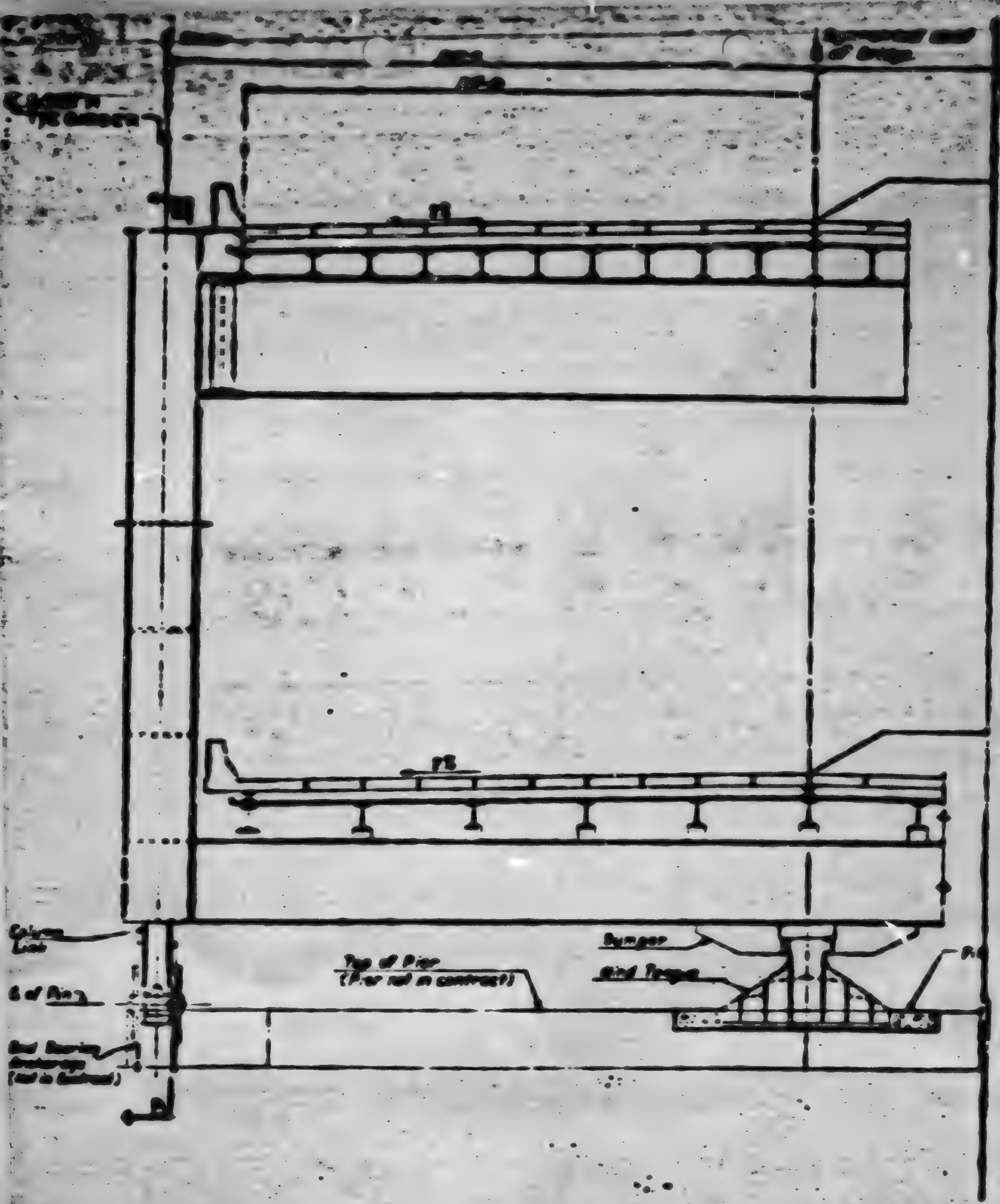
MULTNOMAH COUNTY

RESULTS OF RAISING STRUCTURE 6" AT F.W.-2

DATE: 2-14-72

BRIDGE NO. 2529

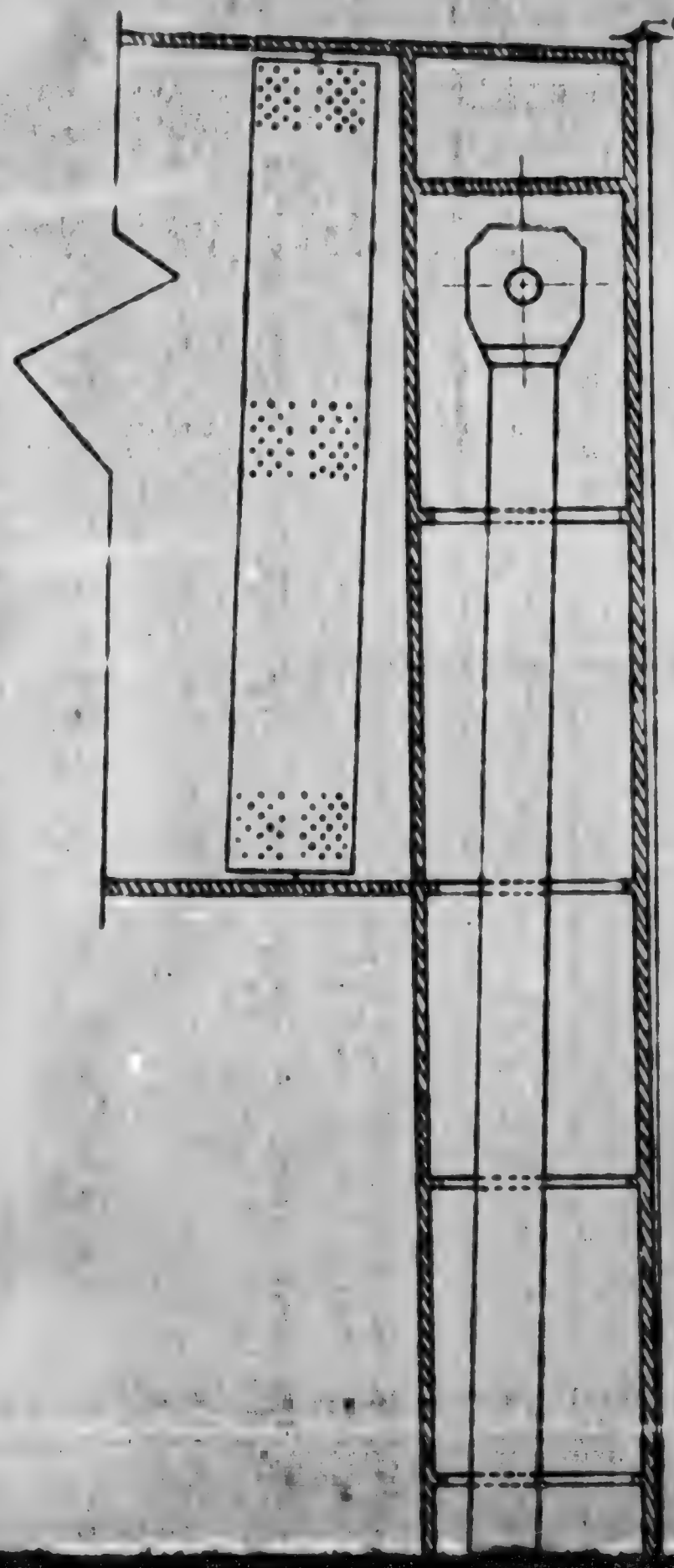
RESIDENT ENGINEER: R.O. CUNNINGHAM.



LOCATION OF CR

CROSS SECTION

OREGON STATE HIGHWAY DEPARTMENT



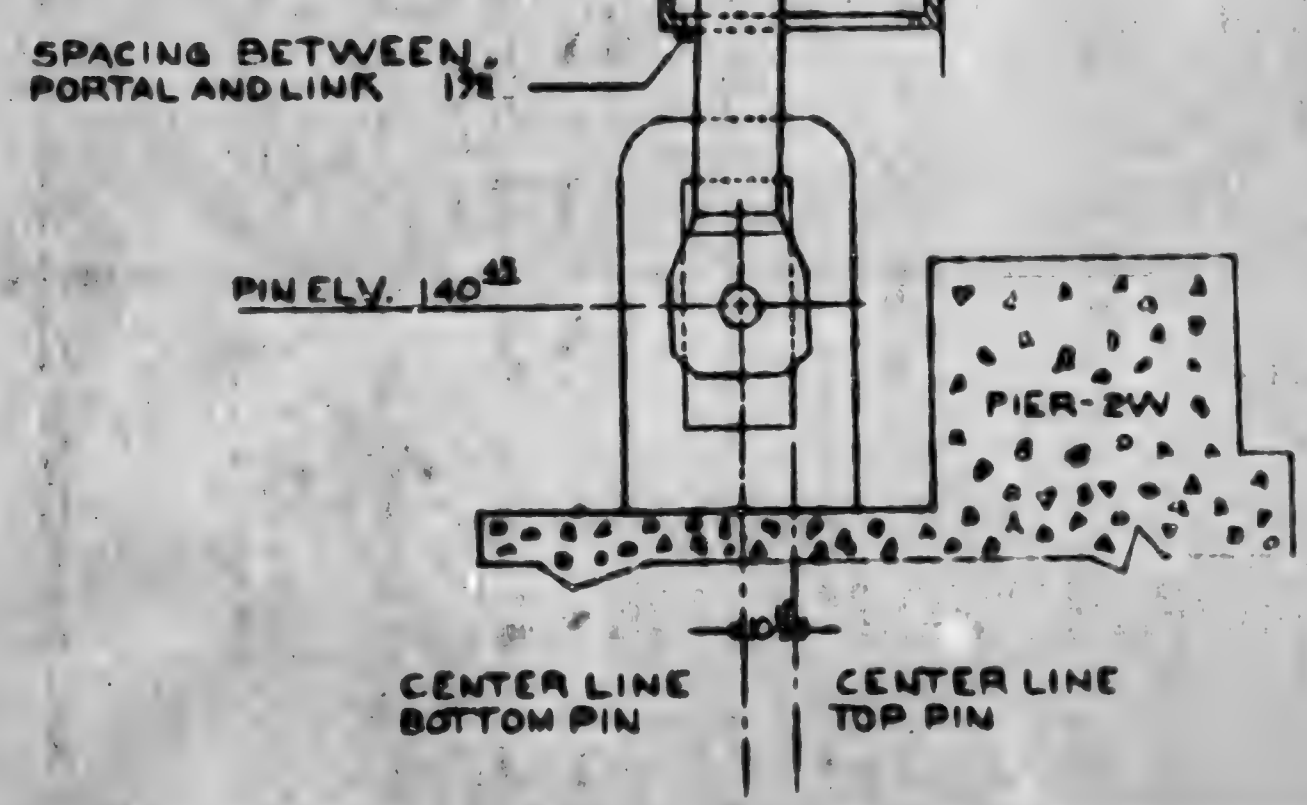
GENERAL NOTES:

1. FOR DETAIL OF LINK AND PORTAL SEE DRAWING NO. 25234-25238 AND 25238.
2. LINK IS NOW STRAIGHT AND IS NO LONGER IN CONTACT WITH THE PORTAL.
3. FOR ADDITIONAL DIMENSION OF THE PORTAL SEE SHOP DRAWING NO.-K3513-201AC.
4. FOR LOCATION OF CROSS SECTION B:B SEE ATTACHED DRAWING NO. 1.
5. NOTICABLE PORTAL MOVEMENT WITH CHANGE IN AIR TEMP. THESE MEASUREMENTS WERE TAKEN AT AIR TEMP. OF +55°F.

*NOTE:

*NOTE:

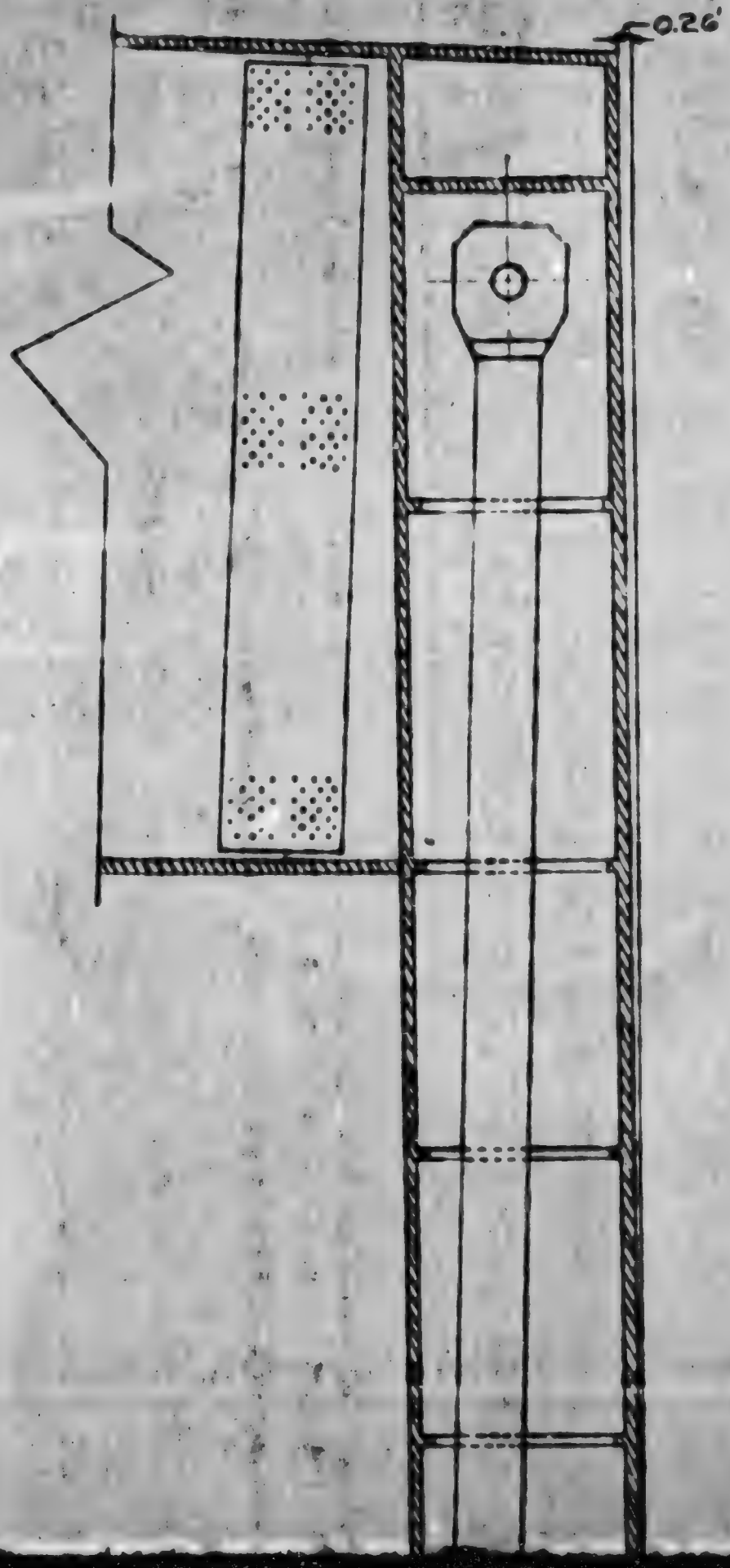
MEASUREMENTS TAKEN AFTER RAISING THE NORTH AND SOUTH TIE GIRDERS 6" AT FALSEWORK.



CROSS SECTION OF SOUTH POST AT P.P.-0

SECTION B-B. LOOKING SOUTH.

OREGON STATE HIGHWAY DIVISION
BRIDGE DIVISION
STADIUM FREEWAY
FREMONT BRIDGE
MULTNOMAH COUNTY
WEST SPAN DRAWING NO 2
DATE 2-10-72 RFS. ENG R.O.CUNNINGHAM
BRIDGE NO. 2529 DRAWN BY: [illegible]



GENERAL NOTES:

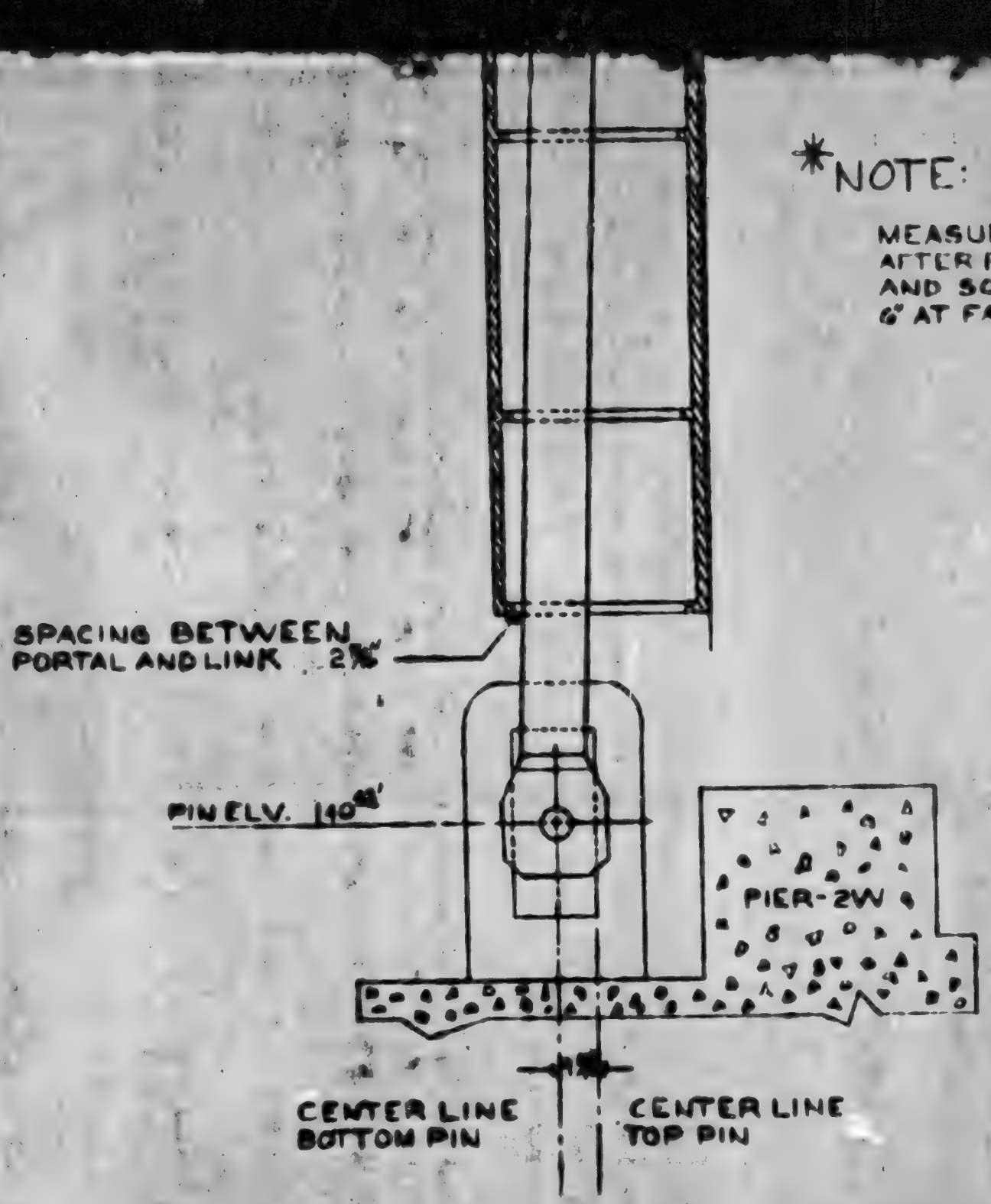
1. FOR DETAIL OF LINK AND PORTAL SEE DRAWING NO 25234-25236 AND [illegible]5238.
2. LINK IS NOW STRAIGHT AND IS NO LONGER IN CONTACT WITH THE PORTAL.
3. FOR ADDITIONAL DIMENSION OF THE PORTAL SEE SHOP DRAWING NO.-K3513-201AC.
4. FOR LOCATION OF CROSS SECTION C-C. SEE ATTACHED DRAWING NO. 1.
5. NOTICABLE PORTAL MOVEMENT WITH CHANGE IN AIR TEMP. THESE MEASUREMENTS WERE TAKEN AT AIR TEMP. OF -55°F.

*NOTE:

MEASUREMENTS TAKEN

*NOTE:

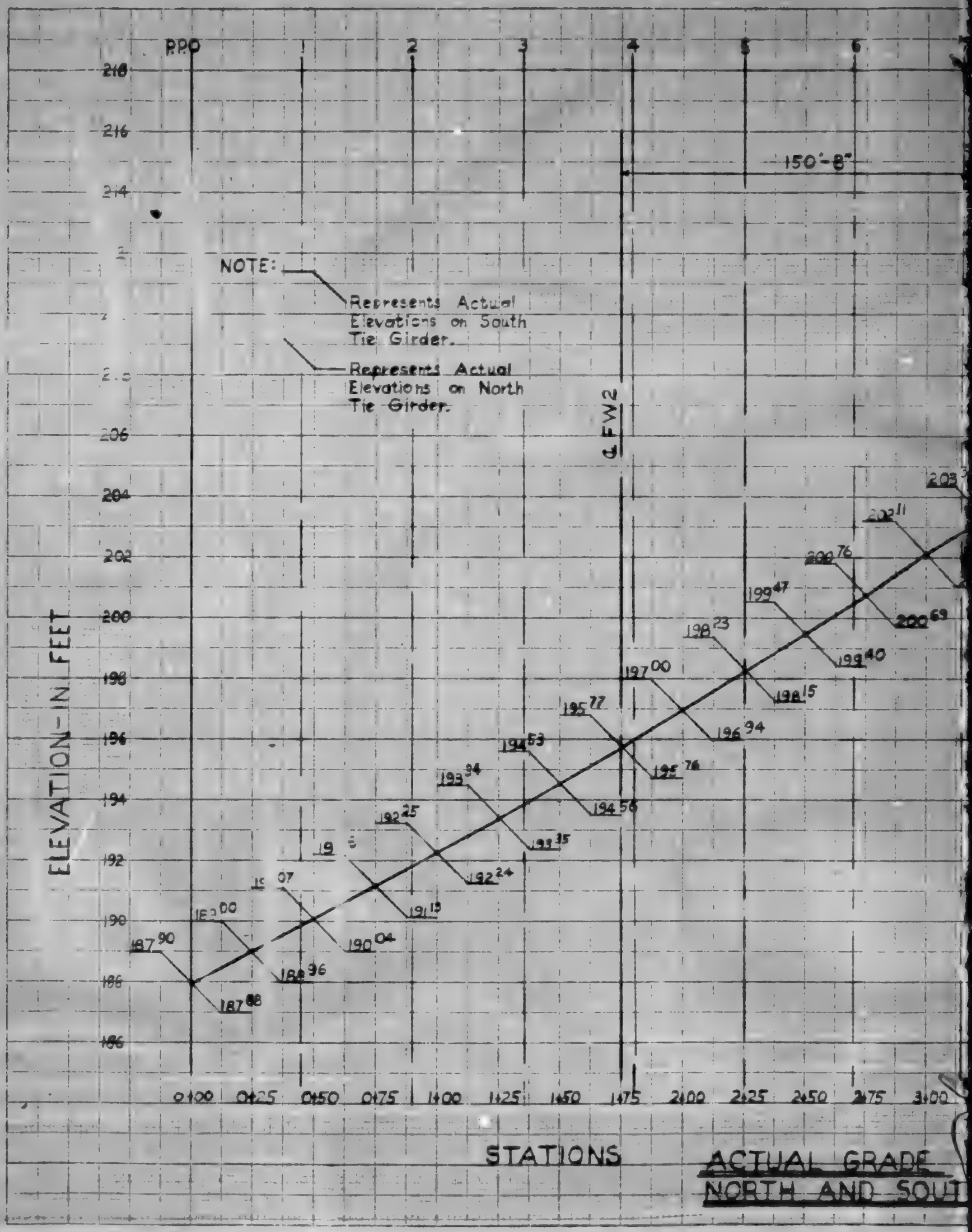
MEASUREMENTS TAKEN AFTER RAISING THE NORTH AND SOUTH TIE GIRDERS 6" AT FALSEWORK.



CROSS SECTION OF NORTH POST AT PP-0

SECTION C-C. LOOKING SOUTH.

OREGON STATE HIGHWAY DIVISION
BRIDGE DIVISION
STADIUM FREEWAY
FREMONT BRIDGE
MULTNOMAH COUNTY
WEST SPAN DRAWING NO 3
DATE 2-10-72 REFS ENG. A.O.CUNNINGHAM
BRIDGE NO-2529 DRAWN BY: [illegible]


P.P.O
1
2
3
4
5
6
150'-8"
NOTE:
Represents Actual Elevations on South Tie Girder.
Represents Actual Elevations on North Tie Girder.
4 FW 2
ELEVATION-IN-FEET
218
216
214
206
204
202
200
198
196
194
192
190
188
186
187.90
187.88
188.96
190.04
191.13
192.25
192.24
193.34
193.35
194.53
194.56
195.77
195.76
196.94
197.00
198.23
198.15
199.47
199.40
200.76
200.69
202.11
203
0+00
0+25
0+50
0+75
1+00
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1+50
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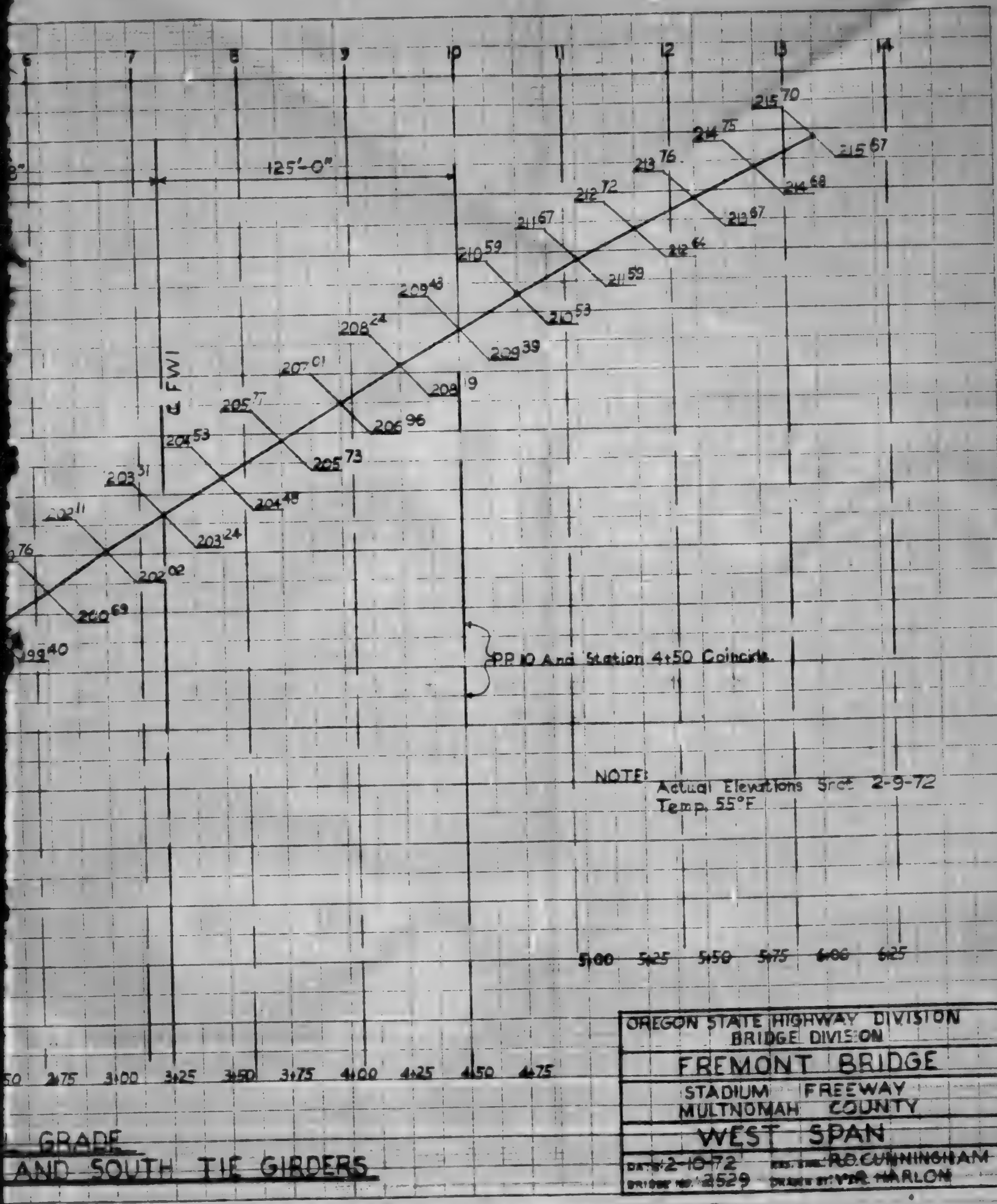
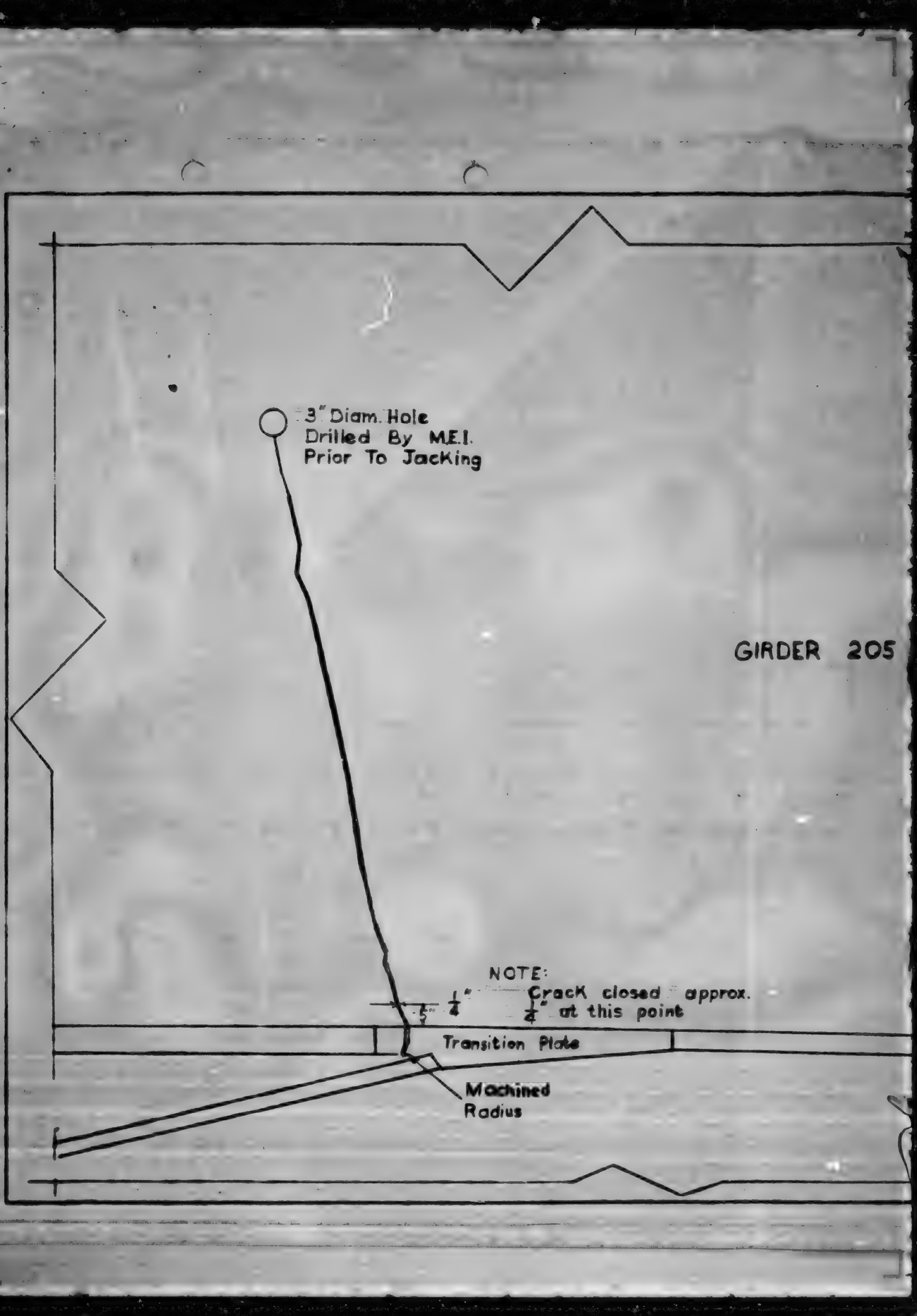
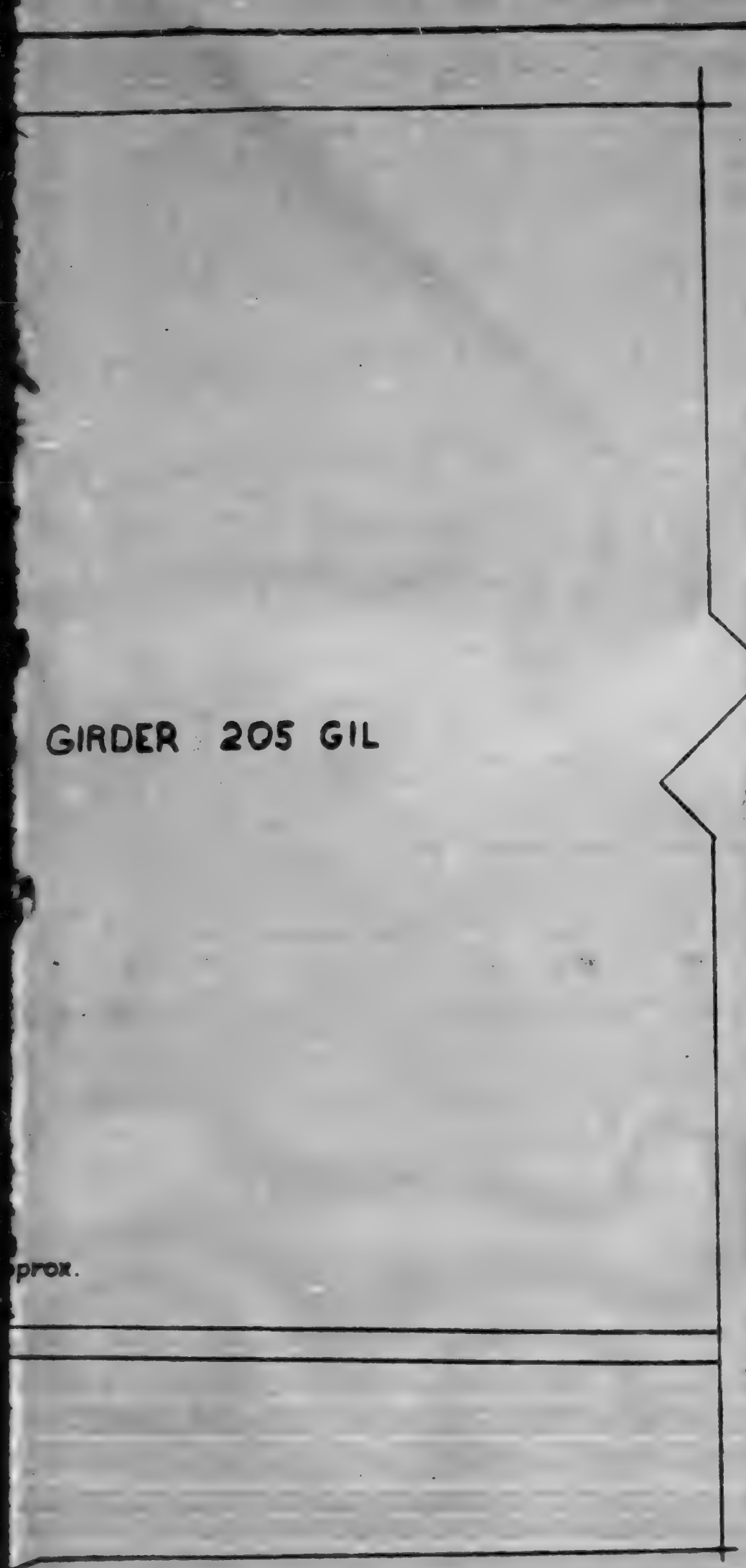
2+00
2+25
2+50
2+75
3+00
STATIONS
ACTUAL GRADE
NORTH AND SOUT



OREGON STATE HIGHWAY DIVISION BRIDGE DIVISION
FREMONT BRIDGE
STADIUM FREEWAY MULTNOMAH COUNTY
WEST SPAN
DATE: 2-10-72 DES. SUP.: R.B. CUNNINGHAM DRAWING NO.: 2529 DRAWN BY: V.D.R. HARLON

GIRDER 205


3" Diam. Hole
Drilled By M.E.I.
Prior To Jacking
NOTE:
Crack closed approx.
1/4" at this point
5/8"
1/4"
Transition Plate
Machined
Radius



NOTE:
1. North web view looking south.
2. Temp. at time of measuement = 55 °F.

OREGON STATE HIGHWAY DEVISION
BRIDGE SECTION

FREMONT BRIDGE

STADIUM FREEWAY
MULTNOMAH COUNTY

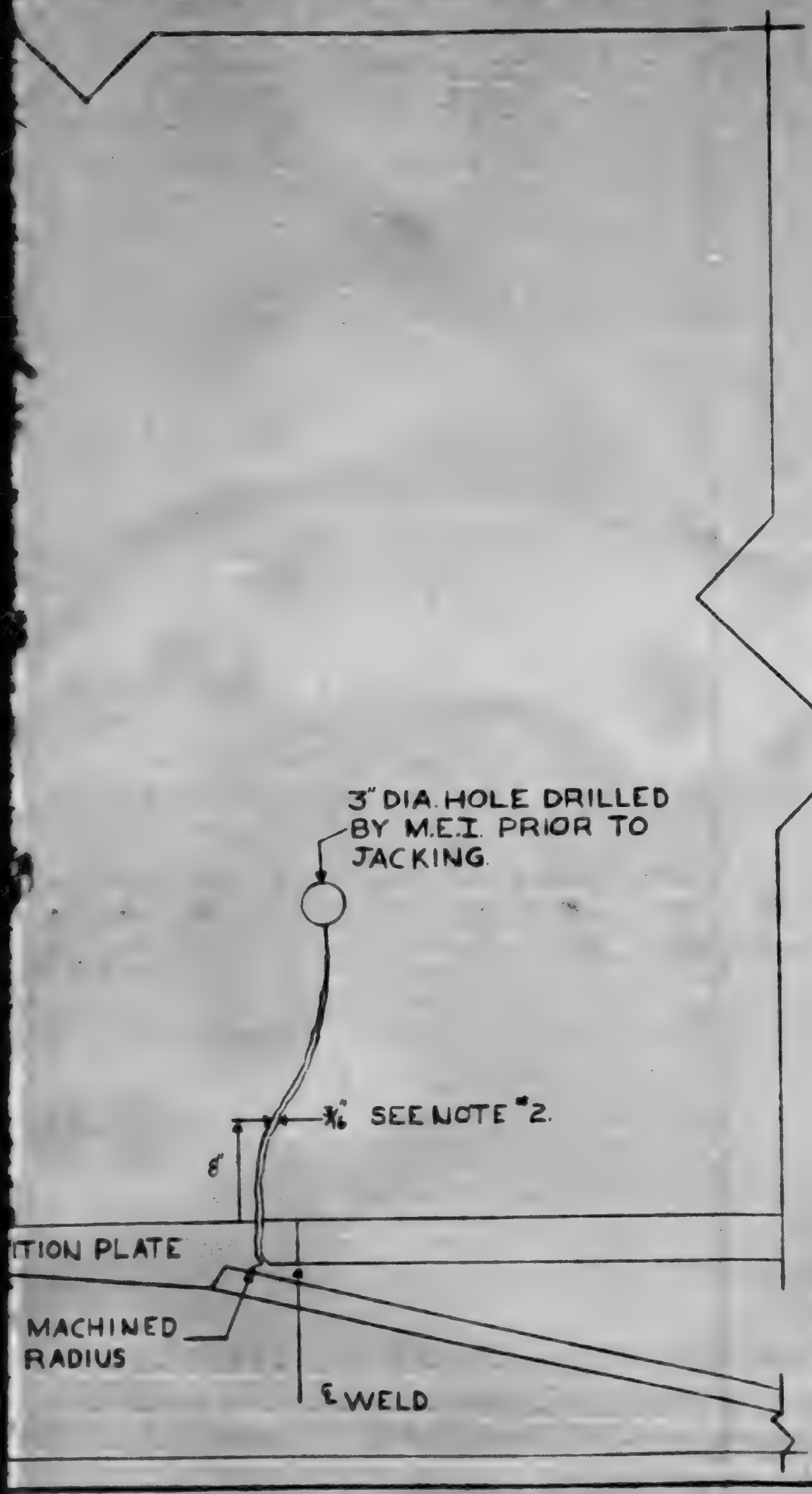
NORTH WEB

DATE: FEB 14, 1972 DETAILED: R.D. CUNNINGHAM
DRAWING NO: 2328 DRAWN BY: W.R. HARLON

GIRDER : 205 : GIL

NOTE:

1. SOUTH WEB VIEW LOOKING NORTH.
2. CRACK CLOSED APPROX 5/16. AT THIS POINT
3. TEMP. AT TIME OF MEASUREMENT WAS 55°F.



OREGON STATE HIGHWAY DIVISION
BRIDGE DIVISION
FREMONT BRIDGE
STADIUM FREEWAY
MULTNOMAH COUNTY
WEST SPAN DRAWING NO.
DATE: 2-14-72 RES. ENG: R.C. CUNNINGHAM
BRIDGE NO. 7529 DRAWN BY: S. SAUNDERS

Job No. _____

Sheet _____ of _____ Sheets

OREGON STATE HIGHWAY DEPARTMENT

Calculations for _____

Made by _____, 19____ Checked by _____, 19____ Backchecked by _____, 19____

FREMONT BRIDGE

SUPERSTRUCTURE

STADIUM FREEWAY
MULTNOMAH COUNTY

LOADS ON ARCH AND TIE GIRDERS JACKS

NOTE: READING TAKEN WHEN BOTH GIRDERS RAISED AN EQUAL AMOUNT.

DATE: 2-14-72

BRIDGE NO 2529

RESIDENT ENGINEER: R.O. CUNNINGHAM

EARL AND WRIGHT · CONSULTING ENGINEERS

CONSULTATIONS

111 HOWARD STREET · SAN FRANCISCO, CALIFORNIA 94105 · 415-981-7272

DATE 2-7-72 PROJECT FR. BR JOB NO.

BY RAL CHK SUBJECT FW & JACKING of PPT Str. Casings

	N	S
Start	G - 150T/EA A - 0	Start G - 205T EA A 0
1"	G - 155 A - 25	G - 215 A - 25
2"	G - 190 A - 25	G - 240 A - 25
3"	G - 225 A 25	G - 255 A - 25
4"	G - 260 A - 25	G - 275 A - 25
5"	G - 280 A - 25	G - 300 A - 25
6"	G - 305 A - 25	G - 320 A - 25

Job No. _____

Sheet 1 of 3 Sheets

OREGON STATE HIGHWAY DEPARTMENT

Calculations for _____

Made by _____, 19____ Checked by _____, 19____ Backchecked by _____, 19____

FREMONT BRIDGE
SUPERSTRUCTURE
STADIUM FREEWAY
MULTNOMAH COUNTY

FREQUENCY READINGS
AND
STRESS CALCULATIONS
FOR
GIRDER 205 GIR

BRIDGE NO. 2529
DATE 2-11-72

OREGON STATE
HIGHWAY DEPARTMENT

TABULATION SHEET
SHEET 2 OF 3 SHEETS

STRAIN GAUGE FREQUENCY READINGS

STATE PRINTING

Gauge	#1	#2	#3	#4	#5	#6	Test		GIRDER JACKED	MEASURED JACKED	
	1936	1887	1861	2047	2121	1779	897				
R	1928	1892	1867	2052	2112	1773	897		SOUTH	1"	
E	1919	1870	1845	2034	2106	1761	897		NORTH	1"	
A	1925	1877	1853	2040	2098	1756	897		SOUTH	2"	
D	1900	1851	1827	2018	2090	1742	897		NORTH	2"	
I	1907	1856	1833	2030	2092	1737	897		SOUTH	3"	
N	1878	1829	1806	1992	2072	1720	897		NORTH	3"	
G	1884	1836	1812	2004	2063	1714	896		SOUTH	4"	
S	1858	1809	1785	1981	2055	1697	896		NORTH	4"	
	1865	1816	1783	1985	2045	1692	896		SOUTH	5"	
	1838	1790	1766	1963	2037	1675	896		NORTH	5"	
	1845	1797	1774	1970	2029	1669	897		SOUTH	6"	
	1819	1770	1748	1946	2020	1652	897		NORTH	6"	

NOTE: 1. The test reading is to check instrument operation.

2. The distance jacked was in an upward deflection and measured at the jacks.

3. The first frequency readings (f_o) taken prior to jacking.

OREGON STATE
HIGHWAY DEPARTMENT

SHEET 3 OF 3 SHEETS

STRESS CALCULATIONS
(ASD)

GAUGE	#1	#2	#3	#4	#5	#6		GIRDER JACKED	TOTAL DIST. JACKED	SOUTH ELV. CHANGE	NORTH ELV. CHANGE
	+0.12	+0.29	+0.35	+0.32	-0.53	-0.33		SOUTH	1"		
S	-1.02	-0.99	-0.92	-0.92	-0.38	-0.99		NORTH	1"	0.083	0.074
T	-0.66	-0.58	-0.46	-0.44	-1.50	-1.26		SOUTH	2"		
E	-2.14	-2.09	-1.94	-1.93	-2.02	-2.02		NORTH	2"	0.160	0.145
S	-1.73	-1.80	-1.60	-1.07	-1.83	-2.23		SOUTH	3"		
S	-3.43	-3.34	-3.13	-3.07	-3.18	-3.20		NORTH	3"	0.245	0.236
	-3.08	-2.94	-2.79	-2.70	-3.75	-3.52		SOUTH	4"		
(KSI)	-4.59	-4.47	-4.29	-4.12	-4.27	-4.42		NORTH	4"	0.315	0.306
	-4.18	-4.08	-3.95	-3.87	-4.31	-4.68		SOUTH	5"		
	-5.73	-5.53	-5.34	-5.22	-5.41	-5.57		NORTH	5"	0.395	0.385
	-5.33	-5.14	-4.90	-4.79	-5.92	-5.88		SOUTH	6"		
	-6.91	-6.63	-6.32	-6.25	-6.48	-6.75		NORTH	6"	0.480	0.468

NOTE: $\Delta\sigma = K \cdot (f^2 - f_o^2) \cdot 10^{-3}$

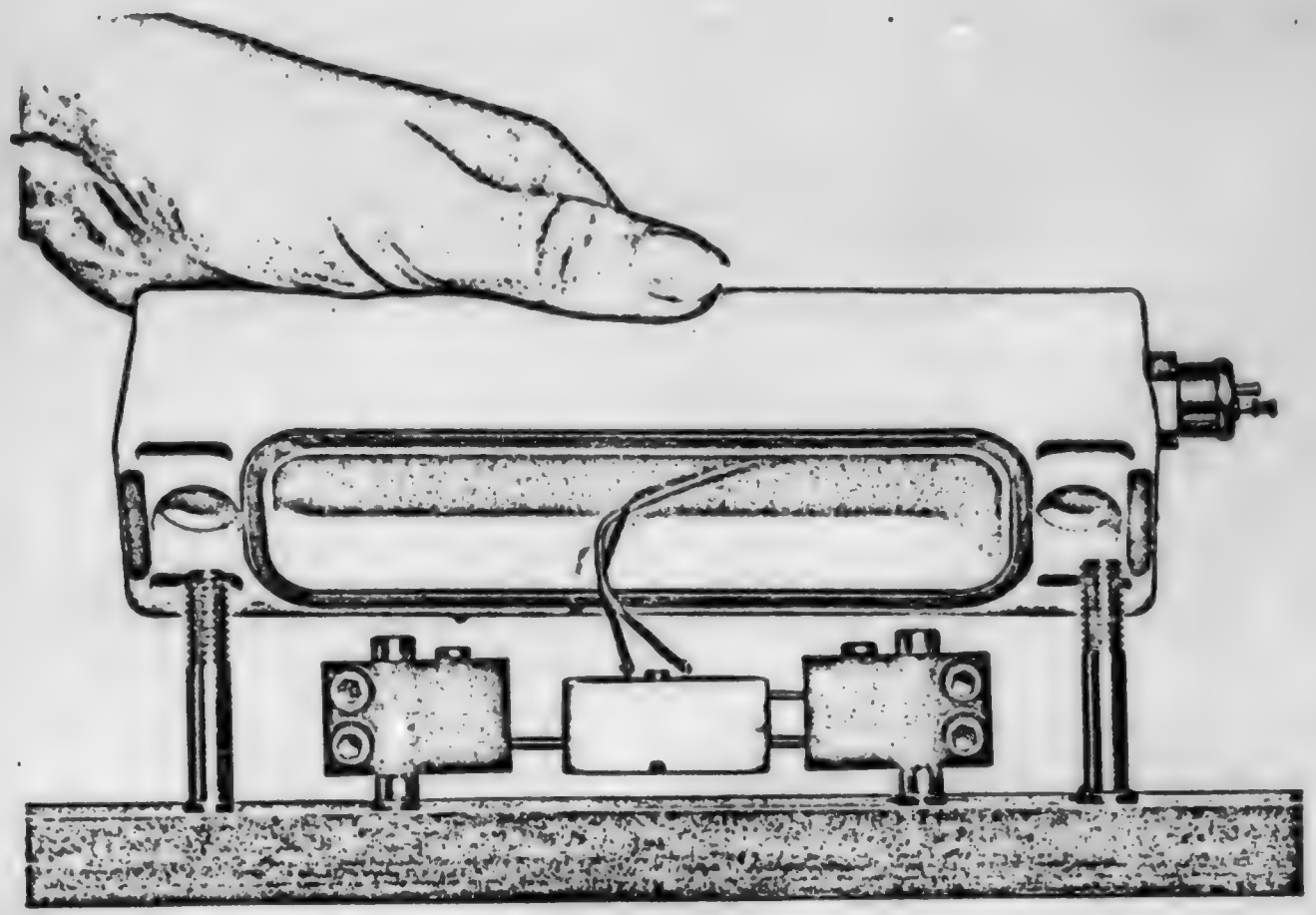
$\Delta\sigma$ = Stress in the structure at frequency f.

K = Strain gauge constant depending on the properties of the materials and gauge dimentions.

K of 155 will give the stress change in lbs/in^2

* Elevations shot over center of false work No. 2 on top of north and south girders.

Elevations were shot after each time both jacks had been raised an equal distance.



VIBRATING-WIRE STRAIN GAUGE

P-200-220

USES

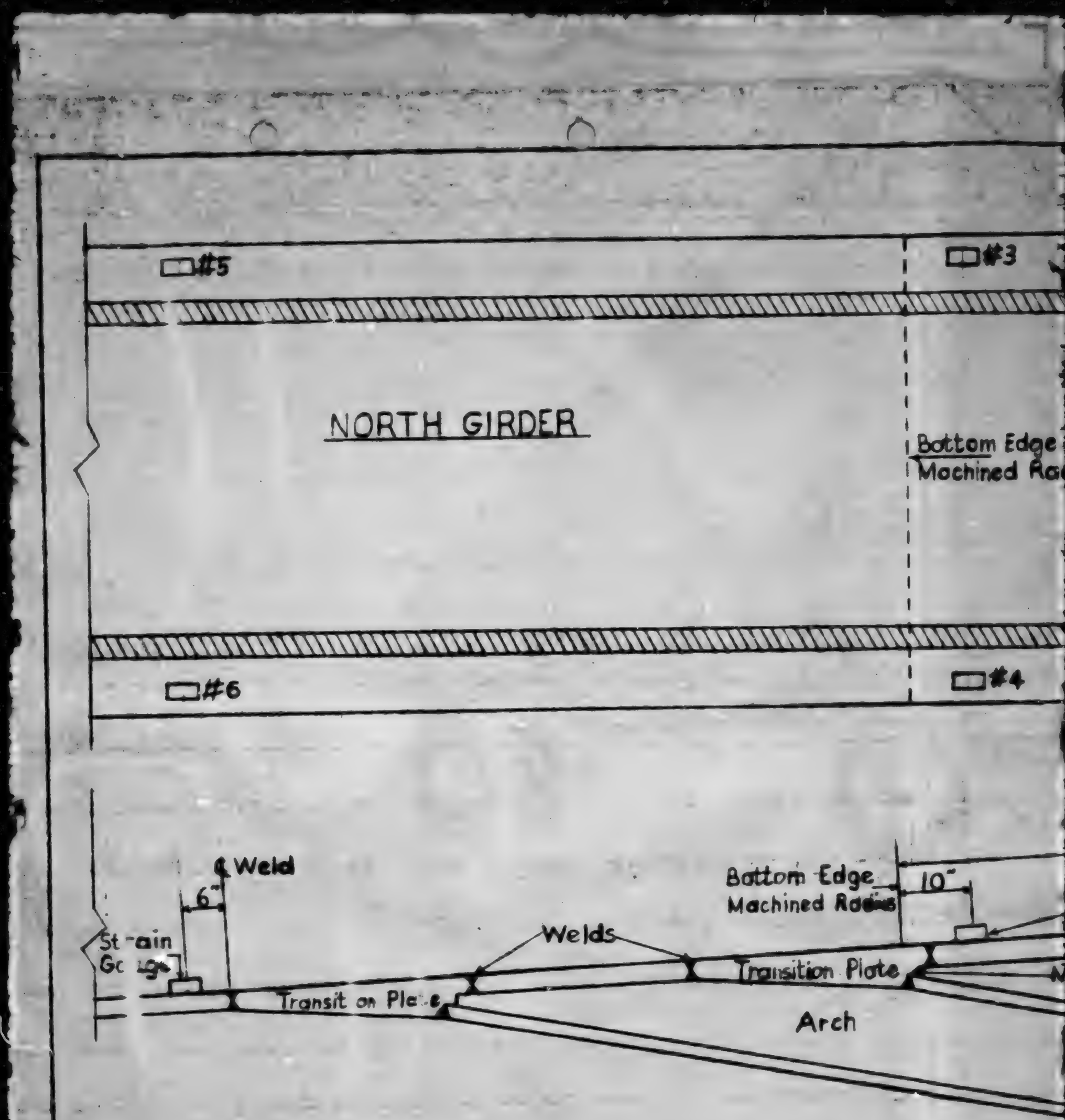
The Preassembled and Sealed Vibrating-Wire Strain Gauge is a surface mounting gauge that is used to measure strains or stresses in any structural element to which it can be mounted. The gauge is fastened directly to two support posts which have been previously attached to the structural element. The support posts can be set in drilled and tapped holes; they can be mounted by a stud-welding process or they can be cast in concrete members. The gauge can be used under water. The housing is higly resistant to impact. Since the measurements can be taken far away from the gauge itself, the use of the gauge does not cause inconvenience to construction.

FEATURES:

Convenient, accurate, sensitive, and stable.
Rugged construction and waterproof.
Quick and simple installation.
Remote and fast measurement.
Easy maintenance and repair.

GEONOR AS

SLOPE INDICATOR CO.
3668 ALBION PLACE N., SEATTLE, WASH. 98103
PHONE: 206 633-3078 CABLE: SINCO SEATTLE



GIRDER 205 GIR

#3

#1

Web

To River

Bottom Edge
Machined Radius

Web

#4

#2

8'-0"

10"

Strain Gauge

Machined Radius

OREGON STATE HIGHWAY DIVISION
BRIDGE SECTION

FREMONT BRIDGE

STADIUM FREEWAY
MULTNOMAH COUNTY

STRAIN GAUGE LOCATION

DATE: 2-11-72 DES. CUNNINGHAM

DRAWN BY: 2577 CHKD. BY: W.B. MARION

RECEIVED
FEB 1 1972
FORM
FORM E-30 (REV. 10-69)

Gen. Files

I 40-5(12)303
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon 97213
February 14, 1972

SUBJECT: Fremont Bridge Superstructure
Contract No. 7276
Idle Equipment

To: A. E. Johnson
Assistant State Highway Engineer
State Highway Building
Salem

CM Mail
CM 2-15-72

Attached you will find a copy of a letter dated February 8, addressed to Mr. Robert Cunningham from Murphy Pacific. This letter lists the equipment which has been idled on the job site due to the girder failure of October 28, 1971. This letter is the means by which the Contractor notifies the State of his idle equipment. Mr. Cunningham is in agreement with the items listed.

This letter is forwarded to you for your information in order to give you a feel for the amount of equipment involved in the work on the east and west backspans of the Fremont Bridge.

H. S. Coulter
Metropolitan Engineer

By:

Edward L. Hardt
Assistant Metropolitan Engineer

ELH:pb

Encs

cc: R. O. Cunningham

NOTED
TOM EDWARDS

RECEIVED
FEB 15 1972
OFFICE OF
STATE HIGHWAY ENGINEER

MURPHY PACIFIC CORPORATION
4300 EASTSHORE HIGHWAY . EMERYVILLE . CALIFORNIA 94608

State of Oregon
Department of Transportation
Highway Division
5821 N.E. Glisan
Portland, Oregon 97213

Attention: Mr. R. C. Cunningham
Resident Engineer

February 8, 1972
Report #3

METROPOLITAN ENGINEER
RECEIVED
FEB 11 1972
ME AME AME MOE MDE MTE

Subject: Labor and Equipment effected by the Girder Failure of October 28, 1971 - period of 1/1/72 to 1/31/72

Gentlemen:

The following list reflects labor and equipment directly idled by the girder failure of October 28, 1971; and is the third such monthly report.

Equipment idled @ West Back-Span Site:

1) Manitowoc 4100W Crawler Crane
1) 20' office Trailer
1) 40' tool trailer
1) Stairway tower
1) elevator tower
1) falsework tower
2) concrete footings
apx. 19,000 sq. ft. safety nets
misc. barricades & lights
1) 600 cfm Joy Air Compressor (as of 11/19/71)
1) Chemical toilet (L&M rental)

Equipment idled @ East Side-Span Site, as of Monday, December 20, 1971:

1) 20' office trailer
1) 40' change shack trailer
1) falsework tower
1) stairway tower
1) Manitowoc 4100W Crawler Crane (as of 11/23/71)
2) FW 1 footings
2) FW 2 footings
1) Jaeger 600 cfm electric air compressor
1) traveler scaffold
1) deck access scaffold (until 1/4/72)
3) toggle bug portable drills (until 1/4/72)
25) 20' lengths of 4" aluminum air [illegible] (until 1/7/72)

RECEIVED
FEB 10 1972
Resident Bridge Engineer

TELEPHONE 415-653-1717
CABLE ADDRESS "MYPAC"

MAILING ADDRESS
POST OFFICE BOX 23007
OAKLAND CALIFORNIA 94623

MURPHY PACIFIC CORPORATION

4300 EASTSHORE HIGHWAY . EMERYVILLE . CALIFORNIA 94608

Labor Flow for period of 1/1/72 to 1/31/72:

50 men on payroll as of 12/31/71;

1 Pilebutt laid off @ Swan Island, 1/3/72 - reduction in forces
1 Ironworker hired @ Swan Is., 1/3/72
1 1015 P&H Operator hired @ Swan Is., 1/5/72
1 Ironworker rehired @ Swan Is., 1/6/72
1 1015 P&H Operator laid off @ Swan Is., 1/7/72
1 Ironworker quit @ Swan Is., 1/10/72
1 Ironworker rehired @ Swan Is., 1/11/72
1 Ironworker Appr. rehired @ Swan Is., 1/12/72
1 Oiler for 1015 P&H rehired @ Swan Is., 1/13/72
1 Ironworker Appr. rehired @ Swan Is., 1/14,72
1 Oiler for 1015 P&H laid off @ Swan Is., 1/14/72
1 Pilebutt hired @ Swan Is., 1/24,72
2 Laborers hired @ Swan Is., 1/24/72 (one of which is a rehire)
3 Ironworkers laid off @ Swan Is., 1/25/72, reduction in forces
1 Laborer laid off @ Swan Is., 1/25/72, reduction in force
3 Ironworker welders laid off @ Swan Is., 1/28/72, reduction in forces
1 Laborer Laid off @ Swan Is., 1/31/72, reduction in force.

48 men on payroll as of 1/31/72

Very truly yours,

Theodore D. Fox

cc's: W. Choate
A. Tokola
J. Murphy
COULTER
HART

RECEIVED
Resident Bridge Engineer

TELEPHONE (415) 653-[illegible]7
CABLE ADDRESS MURPAC

MAILING ADDRESS
POST OFFICE BOX 23037
OAKLAND, CALIFORNIA 94623

RECEIVED
FEB 22 1972
FOR FILING

METALLURGICAL ENGINEERS, INC
ENGINEERING AND APPLIED SCIENCES
2340 S.W. CANYON ROAD
P.O. BOX 1048
PORTLAND, OREGON 97207
503/226-9863
working with: MATERIALS ECOLOGY INDUSTRIAL PRODUCTS AND PROCESSES

RECEIVED
FEB 18 1972
OFFICE OF
STATE HIGHWAY ENGINEER

I-405-5(17)203
7276

TO: State of Oregon
Department of Transportation
Attention: Mr. Walter J. Hart,
Bridge Engineer
State Highway Building
Salem, Oregon 97310

CLIENT NO.

REFERENCE NO. 708085
(705062)

DATE: 2-11-72

SUBJECT: INVESTIGATION OF IN-CONSTRUCTION CRACK IN GIRDER TRUSS JOINT AREA; FREMONT BRIDGE.

Memorandum Report 2-11-72;
Biweekly Work Report Summary.

from Harry Czyzewski, P.E.
Projects Director

The following items, as numbered on page 2, especially were pursued during this two-week period.

1.1 Determine cause(s) of cracks in structure:
1.2 Determine and identify cause(s) with respect to original material quality and subsequent fabrication procedures; and establish whether these were in any way defective such as to be a significant factor in the fractures:

1.3 Determine properties of steels and of weld-joints to serve as a basis for repair and/or correction of cracks and potential defects:

Integrate west-side junction-coupon results into earlier findings.

1.5.2(.1) Photographic Record:
We made additional photography of the condition of the coupons.

1.5.3(.5) Ultrasonic Inspection:
Checked west-side junction-coupon in our laboratory by ultrasonic methods.

1.5.4.1 Metallurgical:
(.2) Macro:
(.3) Metallographic:
Sulfur printing for inclusion distribution.

1.5.4.3 Physical Tests:
(.2) Static:
(.3) Dynamic:
From west-side junction-coupon.

NOTED
A. E. JOHNSON

1.5.4.5.1 Load:
(.1) Fracture Mechanics:
Making calculations and analysis based on prior test results.

We submitted, for your approval, invoice based on this biweekly accumulation of time, using our standard fee schedule procedure, per our contract.

HC:hg

cc: R.O. Cunningham
Ed L. Hardt

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FEB 18 1972
BRIDGE DIVISION

c/001

Item	Description
*1.1	Determine cause(s) of cracks in structure. (Div. M)
*1.2	Determine and identify cause(s) with respect to original material quality and subsequent fabrication procedures; and establish whether there were in any way defective such as to be a significant factor in the fractures.
*1.3	Determine properties of steels and of weld-joints to serve as a basis for repair and/or correction of cracks and potential defects.
1.4	Sample and trepan, as needed, to establish the above. (Div. W)
1.5	Specific phases of investigation, including the following.
.1	History of: (Div. M)
	(.1) Operation
	(.2) Construction
	(.3) Failure
.2	Record of "As-Received" Condition: (Div. M)
*	(.1) Photography
	(.2) Sketch
	(.3) Write-up
.3	Flaw-Detection-Inspection (Div. F)
	(.1) Visual
	(.2) Magnetic Particle Inspection
*	(.5) Ultrasonic
	(.4) Radiography
.4.1	Metallurgical: (Div. Y)
	(.1) Fractography
*	(.2) Macro
*	(.3) Metallographic
	(.4) Microhardness
	(.5) Chemical (Div. A-B)
.2	
	(.1) EMP
	(.2) EM Scan
.3	Physical Tests: (Div. X[machining Div. W])
	(.1) Hardness
*	(.2) Static - machining*- Test for tensile and bend properties
*	(.3) Dynamic - machining*, Cold bath set-up; Test for Charpy properties
	(.5) Fracture Toughness, machining; Cold Bath set-up, test for fracture properties.
.5.1	Load: (Div. I)
*	(.1) Calculation, Fracture Mechanics
.2	Experimental Stress Determination: (Div. Z)
	(.1) Mechanical
	(.2) Pnoto Elastic
	(.3) Strain Gage

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FEB 18 1972
BRIDGE DIVISION

(*) Items on which MEI spent significant time during this two-week interval. See page 1.

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FEB 14 1972
OFFICE OF

Gm. Dills

OREGON STATE HIGHWAY DIVISION

MATERIALS SECTION
SALEM, OREGON 97310

I. 7276-7277-7302
7276

February 8, 1972

Mr. Harry Czyzewski
Metallurgical Engineers, Inc.
2340 SW Canyon Road
Portland, Oregon 97201

Fremont Bridge Crack Study
Contract #7276

Dear Mr. Czyzewski:

Enclosed is a copy of the U.S. Steel mill report on the 24"x 34½"x6¼" coupon from heat No. 720040, received February 4, 1972.

You will note that the test data is within specifications for ASTM A588 steel. Charpy impact data, for which there is no requirement in ASTM, includes one 10 foot lb. test result, 5 foot lb. lower than recommended by FHWA.

The direction of rolling was not shown on the plate. However, the nomenclature of "24" length" and the burned edges in the 34½" direction lead to the assumption that the direction of rolling is parallel to the 24" dimension. Perhaps you can confirm this.

Please let me know if there is any additional information required in connection with this coupon.

Very truly yours,

George M. Baldwin
Administrator of Highways

by

NOTED
A. E. JOHNSON

John C. Jenkins
Engineer of Materials & Research

JCJ:bm
cc: Tom Edwards
A. W. Johnson
W. J. Hart
H. S. Coulter
R. O. Cunningham

RECEIVED
FEB 9 1972
OFFICE OF
STATE HIGHWAY ENGINEER

PRODUCTION DEPARTMENT — METALLURGICAL

United States Steel Corporation

EUGENE E. BOYTIM, NOTARY PUBLIC
HOMESTEAD BORO, ALLEGHENY COUNTY
MY COMMISSION EXPIRES MAR. 24, 1975
Member, Pennsylvania Association of Notaries

TEST REPORT OF PLATES

WORKS HOMESTEAD DISTRICT U.S.S. ORDER NO. ZZ21137 LOAD TALLY OR INVOICE NO. 163-165A9

CUSTOMER ORDER NO. FK3513-01

CAR OR TRUCK NO. CG33107 PA SHIPPER NO. & DATE 95152 1/25/72 48

STATE OF PENNSYLVANIA
COUNTY OF ALLEGHENY

SUBSCRIBED AND SWORN TO BEFORE ME THIS 27TH DAY OF Jan. 1972

Eugene E. Boytim

SOLD TO
UNITED STATES STEEL CORP
AMERICAN BRIDGE DIV
105 OYSTER POINT BLVD
SOUTH SAN FRANCISCO CALIF

SHIP TO
STATE OF OREGON
HIGHWAY MATERIALS DIV
2950 STATE STREET
SALEM OREG 97310

BEING DULY SWORN ACCORDING TO LAW, DEPOSES AND SAYS THAT THE CHEMICAL ANALYSIS AND/OR TESTS SHOWN IN THIS REPORT ARE CORRECT AS CONTAINED IN THE RECORDS OF THE COMPANY.

SIGNATURE M.W. MAXSON, CH. MET.

DATE 01/26/72

SPEC. ASTM-A588-71-GRADE-A-USS-COR-TEN-B-STEEL-LONG-CHARPY-V-NOTCH-@-15-FT-LBS-@-PLUS-40-DEG-F-CONFIRMING-TO-THE-REQTS-OF-ASTM-A370-PARA-2 2-FOR-INFO-ONLY 009191

INSP. T/R MILL SWORN T/R LADLE TEST RESULTS PER SPEC 5 SW TR MURPHY PAC TFTC ENTERPRISES PO BOX 4335 BAYSHORE STATION OAKLAND CALIF 94623 ??1101 ATT JAY P MURPHY & 2 SW TR TO SOLD TO 0710

ITEM NO.	HEAT NO.	TEST OR PIECE IDENTITY NO.	MATERIAL DESCRIPTION: NO. PCS.	THICKNESS OR SECTION	WIDTH, DIA. OR FT. WT.	LENGTH	WEIGHT	YIELD PT. PSI.	TENSILE STR. PSI.	ELONGATION % IN 8"	ELONGATION % IN 2"	% RED. OF AREA	BEND *
02	72C040		1	6 1/4	34 1/2	24	1466	* 58900	85500		22.0		B
	IMPACT TEST RESULTS FOR INFORMATION ONLY.												
	LONGITUDINAL V NOTCH CHARPY IMPACT TEST 10 X 10 MM MADE AT + 40 DEG. F.						28-34-10 FT. LBS.						

RECEIVED
FEB 1 1972
MATERIALS DIVISION
OFFICE

*YIELD POINT @ .0050 EXT.

SPECIMEN SIZE TESTED ACCORDING TO COMPANY RECORDS CONFORMS TO THE REQUIREMENTS OF THE SPECIFICATION LISTED ABOVE

* B OR H INDICATE COMPLIANCE OF BEND OR HOMO TESTS, RESPECTIVELY

CHEMICAL ANALYSIS

HEAT NO.	TYPE	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al	N	V	B	Ti	Cb	Ca
72C040	LADL	16	108	005	018	22	30		55			04		06				

FORM G-20831 REV 671 02.000.0441

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FEB 14 1972
FOR FILING

I-40-N(17)0163
7276

Gen. Files

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
February 4, 1972

To:

SUBJECT: Girder Fracture
Fremont Bridge
Contract 7276

Memo to the File

M Silano 2.8.72

On Friday, February 4, at 9:10 a.m., a call was received from Mr. Silano of Parsons, Brinckerhoff, Quade & Douglas reporting on their finite element computer stress run of the section of the Fremont Bridge between Panel Points 3 and 4.

The basic bottom flange stress, from this analysis, appears to be approximately 17 ksi. This is approximately the value obtained in the original stress computation.

I questioned Mr. Silano on their intentions relative to a further analysis to show the significance of the stress riser effect in the junction piece. He indicated that with the machined radius in the junction piece they believe the stress riser effect would be small. I advised Mr. Silano that we were not convinced of this.

I recommended that he further refine his computations by finite element analysis of the bottom flange junction piece.

Walter J. Hart
Bridge Engineer

WJH:dh

cc Tom Edwards
A. E. Johnson
Ivan D. Merchant
H. A. Schell
Ed Hardt

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FEB 4 1972
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
A. E. JOHNSON

RECEIVED
FEB 8 - 1972
FOR FILING

I-405-8(17)303
7276

Salem, Oregon
February 4, 1972

Mr. Tom Edwards
State Highway Engineer

Fremont Bridge
Contract No. 7276
Heating System for Top Deck

Some time ago, we discussed the possibility of a heating system in the upper deck of the Fremont Bridge to eliminate icy conditions. Enclosed is a copy of a study made by Robert Cunningham at your request.

The system would enclose the area below the top deck with a suspended floor at the level of the bottom of the floor beams. This area would be heated with tubular electric elements suspended from the top deck. The estimated installation cost of the system is approximately $500,000 with an anticipated maintenance cost of $20,000 per year.

Mr. Cunningham recommends that if such a system is to be considered, study should be made to refine some of the assumptions made in his design including:

1. Air circulation.

2. Heat loss.

3. Heat transfer throughout the system.

The Federal Highway Administration's Division Office has not been contacted, although FHWA representatives have been kept advised of Cunningham's study and have indicated considerable interest.

Please advise if you wish to pursue this further and, if so, I would recommend that the report be referred to Parsons, Brinckerhoff, Quade and Douglas for refinement.

A. E. Johnson
Assistant State Highway Engineer

AEJ:ja

Attachment

cc Walt Hart
Ed Hardt

FORM 8-90 (REV. 10-69)

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon 97213
November 15, 1971

SUBJECT: Fremont Bridge
Contract No. 7276
Heating System for Top Deck

To: Ivan Merchant
Bridge Engineer
State Highway Building
Salem

Attached you will find one original and one copy of a feasibility study made by Robert Cunningham of the heating of the top deck of the Fremont Bridge. This study was made at the request of Mr. Tom Edwards.

The system studied would enclose the area below the top deck with a suspended floor at the level of the bottom of the floor beams. This area would be heated with tubular electric elements suspended from the top deck. The projected first cost of this heating system is about $500,000 with an anticipated annual cost of $20,000.

Mr. Cunningham recommends that if this heating system is to be installed that a small research project be undertaken this winter in order to refine some of the assumptions made in his design. These would include (1) Air circulation, (2) Heat loss, and (3) Heat transfer throughout the system.

Much of the design work done for this report was by Mr. Gary Teeter, who was on Mr. Cunningham's crew at the time. Since Mr. Teeter is now on your staff, he can readily advise you on any questions regarding this work.

The FHWA people have shown considerable interest in this deck heating study and have been kept advised of it. In the event that the installation of this system is considered feasible, it is suggested that the subject report be referred to PBQ&D for refinement.

R. L. Schroeder
Metropolitan Engineer
By: Edward L. Hardt
Edward L. Hardt
Assistant Metropolitan Engineer

ELH:pb
Attachments
cc: R. O. Cunningham

RECEIVED
NOV 16 1971
BRIDGE DIVISION

NOTED
A. E. JOHNSON

Copy to Gary Teeter 343 2nd Ave. Apt. 3

OP°32473-734

RECEIVED
FEB 1 1972
FOR FILES

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

Memorandum

I-405-8(17)303

TO : Mr. George M. Baldwin, Administrator of Highways
Salem, Oregon

7276

DATE: February 3, 1972

In reply refer to: 10-35-DA

FROM : Mr. R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon I-405-8(17)303
Fremont Bridge Superstructure
Stadium Freeway
State Force Order #5
Total Estimated Amount of Order - $1200.00
Federal Participation - $1080.00

1x Bridge
cc Melton
2-14-72

Reference is made to Mr. Asbury's letter dated January 27 concerning the subject order. The falsework bent on the west backspan cannot be moved to the east side as planned due to the cracked girder. This requires fabrication of an additional falsework bent to allow construction to proceed on the east side.

We are approving the use of State Forces and State owned equipment, effective January 21, 1972 as being in the public interest under the provisions of PPM 21-6.2 for the following reasons:

NOTED
A. E. JOHNSON

1. Transportation, repair and calibration of the State owned jacks represents a cost savings of approximately $4000.00 from the estimated cost of contractor furnished jacks. The jacks are specialized equipment and purchase cost to the contractor would necessarily be charged to this project.

2. State furnished jacks will assist in reducing the time element in fabricating the new falsework bent and thereby decrease erection schedule delays.

Reimbursement will be made on an actual cost basis. Transportation charges should reflect the origin and final destination of the jacks as being at the Salem shops. A signed copy of the order is returned herewith.

Enclosure
State Force Order #5

2-11-72
REFERRED TO
Johnson
BY ASSISTANT STATE HIGHWAY ENGINEER
cc Young

NOTED
JOM EDWARDS

RECEIVED
FEB 9 1972
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

GPO 910-222

Form A-100—3M

STATE COPY

G-1P

OREGON STATE HIGHWAY DEPARTMENT

Order for State Force Work

APPLYING TO CONTRACT PROJECTS

APPROVED EFFECTIVE DATE [illegible]
Contingent upon modification of project agreement if additional funds are required
BY [signature] Welch
TITLE Dist. Engineer
DATE 2-3-72
FEDERAL HIGHWAY ADMINISTRATION
Order No. 5

Project Name Fremont Bridge Superstructure Date 1-17, 1972

Highway Stadium Freeway Contract No. 7276 F. A. Project No. I-405-8

County Multnomah Prefix 626-1013 Account No. 269-05 (17)303

Description of Work To Be Done: Transport, overhaul, outfit and calibrate four 250 ton state owned hydraulic jacks.

Location by Station Numbers:

347+96.68

Estimate of Quantities and Costs:

All requied $ 1,200.00

METROPOLITAN ENGINEER
RECEIVED
JAN 18 1972
ME AME AME MOE MOE MTE

Explanation: Four state owned hydraulic jacks are to be used by the contractor in the additional falsework bent on this project. The jacks must be checked for proper operation, outfitted with gauges and calibrated prior to their use. It is neccessary to overhaul the jacks and equip each one with a gauges for this project to insure that undue bending is not introduced into the bridge. This requirment is much more stringent on this project and the jacks are

(OVER)

INSTRUCTIONS

Submit a separate order for each piece or kind of state force work to be undertaken. Use the account number applying to that work as indicated in the account numbers assigned to state force work on contract jobs.

Five copies of the order are to be submitted to Salem. After approval by the Assistant State Highway Engineer, one copy will be sent to the Division Engineer and one copy to the Resident Engineer.

Project authorization	$24,054,902.30
Present estimate of project cost, including $1,200.00 for work under this order	$23,239,488.74
Expected under-run (amount)	$815,413.56
Expected under-run (per cent)	3.38 %

Space to right of this line for use of Salem Office

Submitted by: R. O. Cunningham, Bridge Resident Engineer

Approval Recommended: R. W. Eccles Construction Engineer or Bridge Engineer

Approval Recommended: [signature] Assistant Division Engineer

Approved: [signature] Deputy State Highway Engineer Assistant State Highway Engineer

not normaly used for sumh exacting work. The use of state owned jack on the falsework will save approximately $ 4,000.00 over the cost of new jacks.

RECEIVED
JAN.20 1972
BRIDGE DIVISION

Gen. Files

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FEB 2 1972

FORM FILING

I-405-9(17)203
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
February 2, 1972

To:

SUBJECT: Fremont Bridge Grider Fracture
Fremont Bridge
Contract 7276

Memorandum to the File

On Tuesday, February 1, 1972, at 11:50 a.m., a call was received from Mr. Louis Silano of Parsons, Brinckerhoff, Quade and Douglas, reporting on their progress in the back check of the stresses in the Fremont Bridge.

PBQ & D is running a finite element analysis of the stresses in the structure between Panel Points 3 and 4. To date only the geometry of the proposed computer program has been verified. The computer stress run is to be done by McDonald-Douglas in St. Louis. Some difficulty is being experienced in getting the program run at the McDonald-Douglas facility.

It is anticipated that the program may be run during the evening of February 1. If this computer run is successful, Mr. Silano will advise the results by telephone later this week.

Mr. Silano indicated that he anticipated a formal submittal of their findings by February 14.

ORIGINAL SIGNED
WALTER J. HART
Walter J. Hart
Bridge Engineer

NOTED
TOM EDWARDS
2-2-72

WJH:dh

cc Tom Edwards
A. E. Johnson
Ivan D. Merchant
Ed Hardt
R. O. Cunningham
H. A. Schell

RECEIVED
FEB 2 1972
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
TOM EDWARDS

METALLURGICAL ENGINEERS, INC
ENGINEERING AND APPLIED SCIENCES

2340 S.W. CANYON ROAD
P.O. BOX 1048
PORTLAND, OREGON 97207
503/228-9663

working with MATERIALS ECOLOGY INDUSTRIAL PRODUCTS AND PROCESSES

Gen. Files

I. 4C 5 - 8[illegible]
1216

TO: State of Oregon
Department of Transportation
Attention: Mr. Walter J. Hart,
Bridge Engineer
State Highway Building
Salem, Oregon 97310

CLIENT NO.

REFERENCE NO. 708015
(705062)

DATE: 1-28-72

SUBJECT: INVESTIGATION OF IN-CONSTRUCTION CRACK IN GIRDER TRUSS JOINT AREA; FREMONT BRIDGE.

CY Marie 2-4-72

Memorandum Report 1-28-72;
Biweekly Work Report Summary.

from Harry Czyzewski, P.E.
Projects Director

The following items, as numbered on page 2, especially were pursued during this two-week period.

1.1 Determine cause(s) of cracks in structure:
1.2 Determine and identify cause(s) with respect to original material quality and subsequent fabrication procedures; and establish whether these were in any way defective such as to be a significant factor in the fractures:
1.3 Determine properties of steels and of weld-joints to serve as a basis for repair and/or correction of cracks and potential defects:

Completed interim report and attendant record keeping.

NOTED
A. E. JOHNSON

1.4 Sampling:
Trepanned coupons from web areas of the south girder and that of the junction piece to land (west) side of the fracture.

1.5.2(.1) Photographic Record:
We made additional photography of the condition of the coupons.

1.5.3(.5) Ultrasonic Inspection:
We made a standard and checked coupons in our laboratory by ultrasonic methods.

1.5.4.1 Metallurgical:
(.2)Macro:
(.3)Metallographic:
Additional metallography of heat-affected zones.

We submitted, for your approval, invoice based on this biweekly accumulation of time, using our standard fee schedule procedure, per our contract.

HC:hg

cc: R. O. Cunningham
Ed L. Hardt

c/sol

RECEIVED
FEB 3 1972
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
FEB 3 1972
BRIDGE DIVISION

RECEIVED
JAN 31 1972
FOR FILING

I-405-8(17)303
7276

January 27, 1972

Mr. R. E. Simpson
Division Engineer
Federal Highway Administration
Post Office Box 300
Salem, Oregon 97308

FAP No. I-405-8(17)303

Dear Sir:

Herewith for your consideration and approval are copies of State Force Order No. 5, Contract No. 7276, covering furnishing to the contractor State-owned jacks for use in the additional falsework bent in the east backspan on the Fremont Bridge Section of the Stadium Freeway in Multnomah County.

The 250-ton jacks which are to be furnished to the contractor must be checked for proper operation, outfitted with gages and properly calibrated before they can be used. The cheeting nature of the work makes this additional work on the jacks necessary to insure that undue bending is not introduced into the structure.

The furnishing of the State-owned jacks to the contractor will be less expensive than if new jacks were purchased for the work.

The estimated cost of this Order is $1,100.00 with Federal participation of $1,000.00.

This work was tentatively recommended for approval by the Federal Highway Administration Area Engineer, January 21, 1972.

Your approval as of January 21, 1972 is requested.

Very truly yours,

George H. Baldwin
Administrator of Highways

By ORIGINAL SIGNED BY
R. D. ASBURRY
L. H. Young
Programing Engineer

LHY:bb

RECEIVED
JAN 26 1972
FOR FILING

I-405-8(17)205
7276

January 25, 1972

Oregon State Highway Commission

Gentlemen:

Request for Extension of Time
No. 2
February 22, 1972 Meeting

Murphy Pacific Enterprises, contractor for the construction of the Fremont Bridge Superstructure on the Stadium Freeway, I-405, in Multnomah County, Contract No. 7276, has requested an additional 448 calendar days in which to complete the contract work without assessment of liquidated damages.

A tabulation of delays cited by the contractor as being beyond his control is as follows: Mail strike; stiffener installation; Panel Point 3 revision; weld repair for Girder 205S1R; railroad restrictions; unsafe work days; labor strike; and production of fixed-shoe castings.

The contract was awarded on July 3, 1969, and allotted 860 calendar days to complete the work, which forecast a completion date of November 30, 1971. It is estimated that the work will be completed in early 1973. This interim extension of time will prevent the current assessment of liquidated damages.

This is a Federal-aid project and thus far we have the concurrence of the Federal Highway Administration for only 31 days, which covers unforeseen delays to the contractor due to a mail strike, stiffener installation, railroad restrictions, unsafe work days, and a labor strike.

I recommend that the contractor be granted a 31-day extension without assessment of liquidated damages. This was verbally approved by the Chairman on January 20 and will be on the agenda for confirmation at the February 22 meeting.

Very truly yours,

George H. Baldwin
Administrator of Highways

By

Tom Edwards
State Highway Engineer

cc Floyd Query
George H. Baldwin
F. B. Klaboe
A. E. Johnson
Walter J. Hart
F. D. Morgan
V. E. Skoog
L. H. Young
Gary Ross
Gary Sund
H. S. Coulter

AEJ:ja ms

E—220 (Rev.)—5M—8-69

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon

Date October 26, 19 71

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 860 days to 1306 days, within which to complete our Contract No. 7276, without the assessment of liquidated damages. The said contract is described as follows:

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

Please refer to attached report titled "Fremont Bridge Time Extension" dated October 26, 1971.

Respectfully submitted,

MURPHY PACIFIC ENTERPRISES
Contractor

By J. S. Murphy

Bond No. 620402

CONSENT OF SURETY

Date October 26, 19 71

We, General Insurance Company of America, as

surety on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

John W. Davis Attorney-in-fact
450 SANSOME STREET, SAN FRANCISCO, CALIF.
Resident Agent

(SEAL)

BRIDGE DIVISION
DEC 6 1971
RECEIVED

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7276 Contractor Murphy Pacific Enterprises

Highway Stadium Freeway

Section Fremont Bridge Superstructure

Kind of Work Bridge Construction

It is recommended that the request for increase in the number of workdays within which to complete said contract be ~~DENIED~~ or **GRANTED**. The reasons for such recommendation are as follows:

As set forth in transmittal letter of December 3, 1971.

Grant 10 days for a mail strike, 7 days for stiffener installation, 6 days for railroad restrictions, 6 days for unsafe work days, and 2 days for a labor strike. Grant total of 31 days without assessment of liquidated damages.

Recommended for Approval:

Edward Ashbrook
Assistant Division Engineer

R. W. Ellson
Construction Engineer or Bridge Engineer

Admin
Asst. State Highway Engineer

Contract No.	7276
Project designation	I-405-8(17) 303 (State-Federal)
Date awarded	7-3-69
Work started	8-11-70
Per cent completed (Date)	~~78%~~ 78%
No. of Workdays Allowed	860
No. of Workdays Used	~~830~~ 898
No. of Added Workdays Requested	~~18~~ 31

State Printing 3/68

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

TO : Mr. George M. Baldwin, Administrator of Highways
Salem, Oregon

DATE: January 17, 1972

In reply refer to: 10-35-DA

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure
Stadium Freeway
Time Extension
Contract 7276

cy Bridge 1-20-72

Your request for concurrence in an extension of contract ime has been reviewed as requested in Mr. Johnson's January 4 letter. Based on the data submitted I agree with the proposed extension with the exception of Items 3 and 4 in your letter. These items involve 128 days of the requested time.

Since other work was able to progress during the cited delay time, and since there are other associated issues involved in consideration of Panel Point 3 and Girder 205G1R situations, I cannot agree to time extensions in this area at this time. I concur in the 31 remaining days as a valid extension.

NOTED
R. E. KLABON

1-18-72
REFERRED TO
BY DEPUTY STATE HIGHWAY ENGINEER

RECEIVED
JAN 18 1972
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
TOM EDWARDS

NOTED
A. E. JOHNSON

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
FOR FILING

I-405-1(17)
WALTER SCHIELKE
VICE PRESIDENT
CONTRACTING
7276

Gen. Files

American Bridge
Division of United States Steel Corporation
600 GRANT STREET
PITTSBURGH, PENNSYLVANIA 15230

January 25, 1972

Mr. George M. Baldwin
Administrator of Highways
Oregon State Highway Division
Salem, Oregon

Attention: Mr. John C. Jenkins

Dear Sir:

This will acknowledge receipt of your letter of January 10, 1972, regarding the sampling and testing procedures applicable for the material represented in the test report attached to your letter. As a copy of your letter was sent to Murphy Pacific Enterprises, who is our customer, they have requested, and we concur, that this information should be transmitted to you through them. We will develop the requested information and forward this to Murphy Pacific Enterprises for transmittal to you.

We trust this will be satisfactory.

Yours very truly,

NOTED
A. E. JOHNSON

Walter Schielke

Walter Schielke
Vice President-Contracting

NOTED
JDM EDWARDS

cc: Murphy Pacific Enterprises

cl Wilshire 1-31-72

RECEIVED
JAN 31 1972
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JAN 28 1972
MATERIALS DIVISION
OFFICE

RECEIVED
JAN 26 1972
FOR FILING

I-405-8(17)303
7276

January 25, 1972

Mr. R. E. Simpson
Division Engineer
Federal Highway Administration
P. O. Box 300
Salem, Oregon 97308

461

Dear Sir:

Request for Extension of Time
Fremont Bridge Superstructure
FAP No. I-405-8(17)303
Contract No. 7276
Your File: 10-35-DA

This contract was awarded July 3, 1969 and allotted 860 calendar days to complete the work, which forecast a completion date of on or about November 30, 1971. The contractor has suffered innumerable delays beyond his control and has requested that the completion date for the work be advanced a total of 448 calendar days without the assessment of liquidated damages.

In a previous letter to you, dated January 7, 1972, I requested your concurrence in an extension of contract time of 159 calendar days due to delays occasioned by a mail strike, stiffener installation, Panel Point 3 revision, weld repair for Girder 205-G1R, railroad restrictions, unsafe work days, and a labor strike. By letter dated January 17, 1972, you concurred in granting a time extension of 31 days for delays due to all causes except the Panel Point 3 revision and the weld repair for Girder 205-G1R.

The purpose of this letter is to outline delays due to unforeseen problems relating to the production of the fixed shoe castings for this project. A copy of a legal opinion by Leonard I. Lindas, Assistant Attorney General and Counsel, Oregon State Highway Commission, is attached indicating favorable consideration should be given to

delays associated with the production of the castings. A summary of the findings is as follows:

Delays in searching for a foundry capable of producing the castings	78 days
Delays in foundry production of the castings	515 days
Total delays due to castings	593 days
Delays outlined previously (mail strike, etc.) occurring within the same time period as delays due to castings	145 days
Delays due to labor strike, unsafe work days and railroad restrictions occurring after the delays due to castings	14 days
Total delay to the project (all causes) (593 + 14)	607 days

The following is a detailed analysis of all delays associated with the fixed shoe castings for this project that were beyond the control of the contractor. These delays caused the time critical elements of the project scheduling (shop pre-assembly and on-site erection) to be postponed. The top shoe castings are necessary to ensure proper fit-up during the shop pre-assembly of arch rib and tie girder components. Installation of the bottom shoe castings is necessary before on-site erection can begin and, in this case, the bottom shoe castings on the west side were critical path elements for the project.

CASTINGS SUPPLIER SEARCH

1. The Special Provisions for the project as originally mailed to prospective bidders stated that castings and forgings shall conform to the requirements shown on the drawings. Sheet 42 of the contract calls for casting material to be ASTM A148, Grade 80-55, normalized and tempered. The ASTM specification states that castings may be subject to radiographic inspection and magnetic particle inspection. If further requirements are not stated in the Special Provisions, then none is required. Such castings are hereinafter referred to as "Bridge Quality Castings".

2. Having experienced considerable difficulty in obtaining good quality castings in construction of the Willamette River Bridge at West Linn, the State deemed it imperative to insist on a quality control specification for the Fremont Bridge. It was some time, however, before the consulting engineering firm employed by the State (Parsons, Brinckerhoff, Quade and Douglas) was in agreement as to the necessity of such a specification. When agreement was reached, the advertisement for bid had already been mailed to prospective bidders and it was necessary to amend the specifications by Revision Letter No. 3, dated June 17, 1969. The revision letter was received by Murphy Pacific six days prior to the bid opening on June 26, 1969.

   The added requirement provided quality control through magnetic particle inspection in accordance with ASTM E125 and radiographic inspection in accordance with ASTM E280-68. Such castings are hereinafter referred to as "X-ray Quality Castings".

3. The bearing assemblies are of massive size and weight by ordinary construction standards, each of the eight separate components weighing approximately 50 tons. When only Bridge Quality Castings were specified, there were ten foundries that were available and geared to cast the bearing assemblies. The contract was awarded July 3, 1969 and it is reasonable to assume that by September 15, 1969, an order could have been placed with the casting supplier and work begun on Bridge Quality Castings.

   Following receipt of the revision letter, it took the contractor until December 1, 1969 to find a foundry capable of producing X-ray Quality Castings of this size and weight (see attachment for list of foundries). A reasonable delay time in this instance is from September 15, 1969 to December 1, 1969.

Contractor Delayed 78 Days

FOUNDRY PRODUCTION

1. The foundry experienced eight failures in the castings due to three core shifts and five cracked castings.

The core shifts were caused by excessive force applied to the cores by the molten metal and required a design change to allow steel inserts and cored holes in the walls of the castings to prevent further shifting. To prevent further cracking of the bottom castings, the center 6-inch thick plate had to be redesigned.

2. All of the foundries contacted by the contractor for quotations were critical of the design of the top shoe casting. Some of their comments were as follows:

   (a) Because of its configuration, the top casting was not adaptable to the casting process and the deep recesses precluded any further cleaning of the core sand.

   (b) The inside of the walls called for spotfacing. One of the foundries stated they could not clean the internal expanse to allow spotfacing.

   (c) A foundry that did not quote on the top shoe casting stated that because of the wide expanse of the plates or walls of this piece, it would be nearly impossible to feed the metal.

3. National Forge in its letter to Murphy Pacific Enterprises dated October 19, 1971 was critical of the tight delivery requirements. They stated that whenever multiple qualities of large castings are required of a new design configuration, the producing foundry would normally want the opportunity to make sample castings for evaluation before pouring subsequent pieces. Since they were not afforded this opportunity because of the tight delivery requirements, they stated that this led to multiple loss of these castings since they were unable to make corrections to subsequent pieces prior to the problems becoming known on the first piece poured.

4. A copy of the original Murphy Pacific schedule of operations is enclosed. Because of the unexpected difficulty in producing the castings for this project, the bearing assemblies were not ready for the time critical elements of shop pre-assembly and on-site erection. The time estimated for production of two

top bearing assemblies was 25 weeks and the time estimated for two bottom bearing assemblies was 35 weeks, both of which are reasonable periods of time for Bridge Quality Castings.

Shown below is a tabulation of the scheduled and actual completion dates for each pair of bearing assemblies:

Top Castings	Scheduled	Completed
West Side	9/15/69 to 3/9/70	12/1/69 to 2/5/71
East Side	2/2/70 to 7/27/70	3/9/70 to 7/20/71

Total delay for top castings from 3/9/70 to 7/20/71.

Bottom Castings		
West Side	9/15/69 to 5/18/70	12/1/69 to 2/26/71
East Side	2/2/70 to 10/5/70	8/7/70 to 8/5/71

Total delay for bottom castings from 5/18/70 to 8/5/71.

Based on the above, the time from March 9, 1970 to August 5, 1971 required 515 days in addition to what would normally be expected. Considering the doctrine of impossibility mentioned in the legal opinion by L. I. Lindas, the contractor is entitled to this additional time because of the problems associated with foundry production of the castings.

Contractor Delayed 515 Days

In view of the above, your concurrence is requested in granting a total extension of contract time of 448 days, which is 417 days in addition to that previously approved by you.

Very truly yours,

George M. Baldwin
Administrator

By

A. E. Johnson
Assistant State Highway Engineer

RJW:ag ja

Attachments

bc George M. Baldwin
Tom Edwards
F. B. Klaboe
Walt Hart
H. S. Coulter
R. O. Cunningham
L. I. Lindas

FREMONT STREET BRIDGE

FIXED SHOE CASTINGS

The following foundries are the only foundries in the United States, Canada and Mexico which have the capability of casting steel components over 50 tons and requiring radiographic inspection:

FOUNDRY	REMARKS
National Forge	Only complete bidder but to lower severity levels.
Bethlehem Steel	Pre-bid quotation before inspection requirements issued. Can not x-ray through 15" thickness. Will not allow importing portable inspection equipment.
Blaw Knox	Pre-bid quotation before inspection requirements issued. Will not quote to x-ray quality. Critical of design and specifications.
The Falk Corporation	Quoted bottom casting only with rough machining and to lower x-ray requirements.
General Electric	On strike at time of making inquiries. Could not contact due to length of strike. Doubtful of x-ray capability. 85% for own use, 15% for sale.
General Steel Industries	Could not quote because of backlog. Could not meet delivery required.
Pittron Textron	Quoted bottom casting only. Critical of design and specifications. Took exception to some machining.
Canadian Steel Foundries Hawker Siddeley Canada Ltd.	Can not produce bottom casting to x-ray level Class I, but could produce to Class III with some design modification. Cannot produce top casting to Class I either, but could produce to Class V only. Suggest hub cast and the rest of shoe fabricated. Cannot x-ray the 15" thickness.

Source of Information:
Steel Founders' Society of America Directory, 1969-70

MURPHY PACIFIC ENTERPRISES

Fremont Bridge Superstructure

ORIGINAL SUMMARY SCHEDULE

Contract No. 7276

1969 | 1970 | 1971

JUL AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUNE JUL AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV

WEST SIDE

Material Deliveries

Fabricate Arch

Preassemble

Complete Loadout & Ship

Erect

Top

Preassemble

Castings

Bottom

Install Falsework

Fabricate Tie Girder

Set Castings & Align

EAST SIDE

Material Deliveries

Install Falsework

ALL STRUCTURE

JOB CLOSEOUT

Fabricate Arch

Complete Loadout & Ship

Start Formwork

Preassemble

Place Decks & Parapets

Top

Erect

Castings

Bottom

Fabricate Tie Girder

CENTER SPAN

Fabricate Arch

Erect at Swan Island

Float-in, Jack & Erect All Center Span Steel

Preassemble

Complete Loadout and Ship

Fabricate Tie Girders

LEE JOHNSON
ATTORNEY GENERAL

JAMES W. DURHAM, JR.
DEPUTY ATTORNEY GENERAL

DEPARTMENT OF JUSTICE
100 STATE OFFICE BUILDING
SALEM, OREGON 97310
TELEPHONE: (503) 378-6313

December 17, 1971

TRIAL DIVISION

THOMAS D. O'DELL
CHIEF TRIAL COUNSEL

WALLACE CARPENTER
ASSISTANT CHIEF TRIAL COUNSEL

LEONARD I. LINDAS
KEITH R. MALONEY
ASSISTANT ATTORNEYS GENERAL AND COUNSEL

JAMES A. BLEVINS
JAMES P. CRONAN, JR.
QUINTIN B. ESTELL
LAWRENCE J. HALL
LESLIE B. HAMPTON
ROBERT A. HOLLAND
DONALD J. HOWE
JOHN R. McCULLOCH
FRANK C. McKINNEY
EARL M. PRESTON
R. KEN ROBERTS
JAMES A. SANDERSON
JACK L. SOLLIS
CARLOTTA H. SORENSEN
ASSISTANT ATTORNEYS GENERAL

Mr. Tom Edwards
Deputy Highway Engineer
State Highway Building
Salem, Oregon 97310

Re: Contract Time Extension - Highway Contract #7276
Murphy Pacific - Prime Contractor - Fremont Bridge:

Dear Tom:

As per your request, I have reviewed the contractor's claim for an extension of time for delays encountered because of the extreme difficulty attendant to the casting and inspection of the bearing assemblies to be in the Fremont Bridge.

Public authorities who are vested with the power of letting contracts for public works may, upon good cause shown, grant a contractor an extension of the time for the performance of the contract where it appears that he will be unable, through no fault on his own part, to complete the work by the time stipulated in the contract. United States v. Gleason, 175 US 588, 44L Ed 284, 20 §228.

The facts indicate the bearing assemblies to be of massive size and weight, approximately 50 tons. Additionally, our division wrote a revision letter No. 3 outlining some further strict requirements pertaining to the quality of the fixed shoe castings, which letter was received by Murphy Pacific just six days prior to the bid date.

Facts further indicate that prior to the revision requirement for radiographic inspection ten foundries were available and geared to cast the bearing assemblies.

Following the change it took the contractor from August to December to find a foundry capable of producing the castings as specified by the State and incorporating the changes in Revision letter No. 3.

RECEIVED
DEC 21 1971
BRIDGE DIVISION

Further, this foundry suffered eight failures in the castings resulting from complications in the cooling process, none of the foregoing being within the contemplations of either the State or the contractor. DeFelice & Son Inc. v. State, 313 NYS2d 21 (1970).

Your specifications (Section 8-8-1964 Standards) provide for the granting of a time extension where the delay was occasioned by "changes in the plans".

Also, the law is abundantly clear that in those instances when the exigencies of the case reasonably justifies the granting of the time extension, it should be granted, and particularly so when the delay is not attributable to fault on the part of the contractor. (See 71 ALR 899)

The facts herein are closely related to the legal principle of the doctrine of impossibility, the impossibility herein being the unattainability by the contractor of compliance with the time allotted for the performance of the contract.

As stated in the recent case of Savage v. Peter Kiewit Sons Co;, 249 Or 247, 432 P2 519:

> "In applying the doctrine of impossibility, courts recognize that unexpected difficulty * * * may approach such an extreme that a practical impossiblity exists."

In view of all of the foregoing, it is my opinion, favorable consideration should be given to Murphy Pacific's request for a time extension.

L. I. Lindas
Assistant Attorney General and Counsel
Oregon State Highway Commission

LIL:jm

Copy to AE Johnson
Gen. Files
JDH
orig & 1 cy

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FOR FILING

J. O. WRIGHT, D. ABCE
W. W. HAYES, M. ABCE
E. J. LEWIS, F. ABCE
W. M. MARTINOVICH, M. ABCE
W. R. SCHMIDT, F. ABCE
J. E. RINNE, F. ABCE

EARL AND WRIGHT
CONSULTING ENGINEERS
657 HOWARD STREET
SAN FRANCISCO, CALIFORNIA 94105
415-981-7770

AUSTIN W. EARL
(FEB. 1968)

CABLE EANDW
TELEX 27454
TWX 910-372-7218

I-880-2(17)213
1-76

January 20, 1972

Murphy Pacific Corporation
4300 Eastshore Highway
Emeryville, California 94608

NOTED
A. E. JOHNSON

Attention: Mr. A. J. Tokola
Project Manager

Subject: Fremont Bridge

CH Nelson 1-31-72

Dear Sirs:

We were informed on Monday of this week, by Jack Geer, that the State of Oregon has directed you, by letter, to raise the bridge by means of extending the jacks at Falsework Number Two to reduce the stresses in the hanger bars at Panel Point 0.

At the present time, the falsework load beneath the North Tie Girder equals 680 kips; beneath the South Tie Girder equals 380 kips; and beneath the South Arch equals 40 kips. Both the North and South hanger bars at Panel Point 0 are in contact with the bottom diaphragms of Portal Frames and are bent longitudinally: the south hanger some 2 inches, and the north bar about 1 inch. By raising the elevation of Falsework Number Two by 6 inches, the corresponding rotation that will occur at Panel Point 0 will relieve the bending in the hangers and provide clearances between the hanger bars and the lower portal diaphragms of 3 to 3-1/2 inches. The resulting stresses in the hanger bars will be of the order of 10 kips per square inch.

We recommend that the bridge be raised that 6 inches as follows: Increase the load in the South Arch Jacks to 50 to 75 kips each and maintain this load as the North and South Tie Girder Jacks are simultaneously raised 6 inches. The final load in the jacks beneath the North Tie Girder will be approximately

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JAN 28 1972
BRIDGE DIVISION

RECEIVED
JAN 24 1972
Resident Bridge Engineer

NOTED
R. W. ELLISON

650 kips each (1300 kips total). The total combined load in the South Tie Girder and Arch Jacks will be somewhat less due to the discontinuity in the South Tie Girder resulting from the fracture at Panel Point 3.

Should you have any questions regarding this matter, please contact us at your earliest convenience.

Very truly yours,

EARL AND WRIGHT

R. A. Leber
Sr. Project Engineer

RAL:mr

cc: WAChoate ✓
JPMurphy
EGeer
H.S. Coulter
Walt Hart X

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JAN 31 1972
OFFICE OF
STATE HIGHWAY ENGINEER

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I-405-8(17)303
7276

DEPARTMENT OF JUSTICE

Memorandum

TO: L. I. Lindas

DATE: January 18, 1972

FROM: Bob Holland

SUBJECT:

I received a call from Mr. Main of U. S. Steel in San Francisco.

He stated that he has been dealing with you pertaining to the structural defect in the Fremont Bridge girder.

He mentioned that the State would not allow U. S. Steel to let their metalurgist view testing of the girder. Now, U. S. Steel has a letter from Mr. John Jenkins asking U. S. Steel to send cetain data to him.

In view of the fact that they are not receiving any cooperation from the State, he thought it unique that the State should ask them for data.

He asked that I leave a memo to this effect for your information, and also that I mention the fact to Mr. Edwards.

BH:hg
cc - Tom Edwards
John Jenkins

NOTED
A. E. JOHNSON

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JAN 18 1972
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
TOM EDWARDS

SPEED MEMO

Mr Johnson — Al Johnson

OREGON STATE HIGHWAY DEPARTMENT

FORM E-220 (REV. 2-68)

TO: ~~Lyman Lindas~~

SUBJECT: Girder break investigation, Fremont Br.

FROM: John Jenkins

DATE: 1/18/72

Bob Holland called today regarding a phone call he received from Mr. Main of USSteel, San Francisco, which included information re a request I had made of American Bridge for information. I am enclosing a copy of the request in question, dated January 10, 1972. This was an outcome of a meeting of OSHD & FHWA personnel at Metallurgical Engineers, Inc. on January 6. As of the moment Mr. Main apparently has stated that I won't get the information requested.

I should further advise you that, at the request of MEI and our Bridge Sec., on Nov. 16, 1971 I called U.S. Steel, Tom Haliburton, San Francisco re obtaining a scrap of 6" thick A588 plate from some source to use in making studies of comparative properties with the grain & 90° to the grain. Not finding a scrap, USSteel appended my request to a current order and our specimen was to have been shipped from Homestead, Pa. on about Dec. 26, 1971. It has not been received and I don't know whether it too might have been a victim of non cooperation. Can you find out?

John C. Jenkins
(SIGNATURE)

cc Walt Hart. ✓

PLEASE REPLY HERE

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JAN 19 1972
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
D. O. Christensen

cy Marie
1-20-72

RECEIVED
JAN 19 1972
BRIDGE DIVISION

January 10, 1972

American Bridge Division
United States Steel Corp.
105 Oyster Point Blvd.
South San Francisco, Calif.

Gentlemen:

You are aware that a large crack has developed in the Fremont Bridge in Portland, Oregon and the Oregon State Division has retained a metallurigical consultant to investigate the material in the structure.

The metallurgist has requested that we determine the sampling and testing procedure for the heats and rollings represented by our material. He is particularly interested in the relative locations of the test specimens and the plates which we received. A copy of the original mill report is attached.

We would appreciate your cooperation in getting this information as soon as possible.

Very truly yours,

Geo. H. Baldwin
Administrator of Highways

by

John C. Jenkins
Engineer of Materials & Research

JCJ:bm
attach.
cc: Murphy Pacific Enterprises
Leonard Lindas
Walt Hart

RECEIVED
JAN 19 1972
BRIDGE DIVISION

H-20082

UNITED STATES STEEL CORPORATION

METALLURGICAL DEPARTMENT

HOMESTEAD WORKS

FILE NO. _____

Report of CHEMICAL and PHYSICAL Tests of 1 O H Plates February 4 1970

Charged to American Bridge Division U S S C Shipping Notice 163-07238 (7) 1/23/70

Shipped to Emeryville California Car Number PLE 2288

Customer's Order No. and Date	Mill Order No.	Heat No.	Slab No.	ANALYSIS C	Mn	P	S	Si	Cr	Ni	Test Piece Cut From	Yield Point lbs. per sq. in.	Tensile Strength lbs. per sq. in.	Elong. In 2" %	Red. of Area %	Bend Test
EK35130 01	2205042	71E891 ✓		.16	1.17	.020	.024	.25	.58	.27	6 1/4"	56960	87670	27.0		OK
				Cu .32	V .06											
		Longitudinal V Notch Charpy Impact Tests 10 x 10 MM Made at Plus 40 Deg F. 55-68-35 Ft Lbs.														
"	"	69E859 ✓		C .17	Mn 1.18	P .011	S .022	Si .23	Cr .52	Ni .24	6 1/4"	54980	85190	32.0		OK
				Cu .31	V .05											
		Longitudinal V Notch Charpy Impact Tests 10 x 10 MM Made at Plus 40 Deg F. 50-52-62 Ft Lbs.														
"	"	69E859 ✓		C .17	Mn 1.18	P .011	S .022	Si .23	Cr .52	Ni .24	5 1/2"	59930	88650	27.0		O
				Cu .31	V .05											
		Longitudinal V Notch Charpy Impact Tests 10 x 10 MM Made at Plus 40 Deg F. 80-75-90 Ft Lbs.														

Plates and Tests as Rolled
PLATES ASTM A588-68 Grade A USS COR TEN B Steel Mech M Tests Charpy Impact V Notch Long M Test
At Plus 40 Deg F Conforming to the requirements of ASTM A370 Para 23 Info Only

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JAN 19 1972
BRIDGE DIVISION

STATE OF Pennsylvania
COUNTY OF Allegheny } ss

_____, being duly sworn according to law, deposes and says that the figures set forth above are correct, as contained in the records of the company.

Subscribed and sworn to before me this 5th day of Feb A.D., 1970

_____ Notary Public

OTIS M. FAWCETT, NOTARY PUBLIC
HOMESTEAD BORO, ALLEGHENY COUNTY
MY COMMISSION EXPIRES MAY 25, 1973
Member, Pennsylvania Association of Notaries

My Commission expires _____

M W Maxson - Chief Met/lb

to _____

Bm. Br.
Bill Lane

United States Steel Corporation

Mail remittance to
P. O. Box 1184 PITTSBURGH PA 15230

Customer Order	USS Order No.	Invoice Date	INVOICE NUMBER	Page
EK35130 01	ZZ-05042	1/25/70	163-07238	01

Material No.	Shipper's No.	Shipping Date	Shipped From	Routing	
PLE 2288	00099	1/23/70	Homestead, Pa.	PPD URR PC TPW ATSF (SI #8)	

Sold to

AMERICAN BRIDGE DIV
UNITED STATES STEEL CORP
105 OYSTER POINT BLVD
SO SAN FRANCISCO CALIF

Ship to

MURPHY PACIFIC ENTERPRISES
4300 EASTSHORE HIGHWAY
EMERYVILLE CALIF

02

Terms CLEAR 1/2

Item No.	Units	Description	Quantity	Unit Price	Amount
		PLATES ASTM A588-68 GRADE A USS COR TEN B STEEL MECH H TESTS CHARPY IMPACT V NOTCH LONG M TEST AT PLUS 40 F CONFORMING TO THE REQUIREMENTS OF ASTM A370 PARA 23 FOR INFO ONLY			
02	4	6-1/4 X 34-1/2 X 66	16128		
	HEAT 712691 PCS 2				
	692859 2				
03	4	5-1/2 X 34-1/2 X 66	14192		
	HEAT 692859 PCS 4				
	8	TOTAL	30320		
	REFER 163-07238				
	B/L WT 100500	PRORATA 30320	2.39	705.39	

SHIPPING NOTICE ONLY

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JAN 19 1972
BRIDGE DIVISION

ORIGINAL of this invoice on GREY paper COPIES on WHITE paper. If shipment this car from date of invoice
the above represents to the best of knowledge and belief complete and correct in accordance with the regulations of the ICC and other governing agencies of the

7276

FORM E-20

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
January 13, 1972

To: MEMO TO THE FILE

SUBJECT: Fremont Bridge
Contract 7276

THIS REPORT IS PREPARED IN CONTEMPLATION OF POSSIBLE LITIGATION AND IS REGARDED AS A PRIVILEGED DOCUMENT.

On this date, Robert Ellison called Bob Crabtree of Howard, Needles, Tammen and Bergendoff and inquired about their latest findings. This call was necessary since the report due at this time has apparently been lost in the mail. The following facts were indicated to Mr. Ellison:

1. The erection stresses compare favorably with those shown on the erection drawings.

2. A finite element analysis of stress in the machined part indicates stresses varying from 34,000 to 47,000 psi. (47,000 psi would be with no falsework support, while the 34,000 psi is with some type of assumed falsework support.)

3. It appears that in the final condition some fibers in the radius of the machined piece may reach 50,000 psi.

4. It appears that the material in the machined piece should have yielded instead of failing.

5. The structure was found to be a little stiffer than indicated by the erection people.

6. Howard, Needles does not find much from a stress standpoint which would cause the current failure.

It appears that this is probably a material problem. It is possible that the configuration and high stresses in the radius of the machined piece may have contributed to the effect of a defect in the material and the resultant failure.

A. E. Johnson
Assistant State Highway Engineer

AEJ:ja

cc Tom Edwards
Walter Hart
Ed Hardt

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JAN 1972
STATE OF OREGON
1859
J.405-3(1)-FC3
MATERIALS SECTION
SALEM, OREGON 97310

Gen. Files

OREGON STATE
HIGHWAY DIVISION

January 13, 1972

Mr. Harry Czyzewski
Metallurgical Engineers, Inc.
Charlton Laboratories
2340 SW Canyon Road
Portland, Oregon 97201

Cracks in A514 Welds
PTL Report 109, 116
Fremont Bridge
Contract No. 7276

Dear Harry:

You were inquiring about the 90-plus cracks in welds referred to in PTL reports 109 and 116. I now have information from PTL identifying the welds involved.

I am enclosing a letter from Mr. Ralph Mikus, manager of the San Francisco District office of PTL, and copies of Murphy Pacific drawing No. 104CG. I have indicated in red the joints involved: principally the arch rib closure welds and the arch rib 1½" diaphragm fillet welds.

If there is any other information needed, please let us know.

Very truly yours,

George M. Baldwin
Administrator of Highways

by

John C. Jenkins
Engineer of Materials & Research

NOTED
A. E. JOHNSON

JCJ:bm
encl.
cc: A. E. Johnson
W. J. Hart
H. S. Coulter
R. O. Cunningham

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JAN 14 1972
OFFICE OF
STATE HIGHWAY ENGINEER

PITTSBURGH TESTING LABORATORY

ESTABLISHED 1881

INSPECTING ENGINEERS AND CHEMISTS

5514 DOYLE STREET

OAKLAND, CALIFORNIA 94608

AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AND AUTHORIZATION FOR PUBLICATION OF STATEMENTS, CONCLUSIONS OR EXTRACTS FROM OR REGARDING OUR REPORTS IS RESERVED PENDING OUR WRITTEN APPROVAL.

January 4, 1972

Oregon State Highway Department
Laboratory Building
2950 State Street
Salem, Oregon 97310

Attention: Mr. John Jenkins
Materials Engineer

Subject: Transverse Cracks which occurred during the fabrication of piece # 104 sections for the Fremont Bridge

Dear Mr. Jenkins:

We hope the following description will help to clarify the cracking problem which was mentioned in several of our reports, namely number 109 and 116.

We have discussed this cracking problem with Mr. Nystrom, who was our lead inspector on the Fremont Bridge Project. The following details came from his memory and from re-reading reports written during fabrication.

The print number referenced is # 104CG. All cracks occurred in T-1 Steel. Most cracks occurred in the C-U6 typical welds. Some occurred in 3/4" typical fillet welds between interior stiffeners and side plates of the arch ribs.

Where the cracks occurred in the C-U6 typical welds the plates involved were; pdk/pdn to pbh/pbw to pdm/pdp to pbk/pby.

Where the cracks occurred in 3/4" typical fillets, the internal stiffeners involved were pbv and pbt plates. These cracks were found during dye penetrant and magnetic particle inspection. Most were found by the contractor quality control men. The remainder were found by our inspectors and magnetic particle technician.

All cracks were transverse to the weld, small in size, and did not extend into the paint metal.

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MATERIALS DIVISION
OFFICE

Each crack was air arced out, the sound metal was tested with dye penetrant and magnetic particle equipment. When our inspectors were satisfied that the crack was gone the area was pre-heated, welded, ground, and tested again with dye penetrant and magnetic particle equipment. Cooling was controlled by the use of asbestos blankets.

We hope the above information helps clarify inspection report numbers 109 and 116.

Very truly yours,

PITTSBURGH TESTING LABORATORY

Ralph F. Mikus

Ralph F. Mikus, Manager
San Francisco District

RFM:pr
cc: 1- Mr. Pressler
1- Don Scott, Portland Office

RTM74 R/L
K3510

{ Bolt Gusset to Ship.

clr
Clear 3"
3½ 1:7
3½ 1:7
pdn
pbw
pp
pbv
pbv
pbv
pdp
3'-3½
Notch For Arch Ribs
End of Top Flg
2'-7 3/32
6'-6
End-pp
pdn
3'-2 11/16
2'-4½
11'-1
11'-1
P3
pdp
K
½ Full Length
5/12
5/16 Arch Rib
PW101
5/16
5/12 Unless Noted
5:3"
A
LEFT M
3/8
7½ 10@3½=2'-11 7½
4'-1
LEFT N
6½
14@3½=4'-1
See other End for Square Tol.
SRTM1-P
(165 Holes)
K3517
3/8
3½
0°53'25"
3/16
12
pdk
pdn
2
3
3
3
2'-0
2'-0
pbk
pby
pbm
pp
pbh
pbw
2
3
C-U6 Typ
pdm
pdp
TC-U19 Typ
K
Floor Bm. @ 90° to Shipping Weld
½ Fl. Bm.
3/8
3/8
3/8
3/4
pc101
SRTM12
K3509
(123 Holes)
Shop Note:
Floor Beam Conn
Field Welded w/
Field Welded Girder
Weld or oth.

JAN 14 1972

FOR FILING

I-405-8(17)303

7776

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

January 12, 1972

Salem, Oregon

SUBJECT: Fremont Bridge

To: Memo to File

On December 28, 1971, I had a conference with respect to where we stand on the Fremont Bridge. Three subjects were discussed:

(1) The properties of the metal;
(2) The design characteristics; and
(3) The erection characteristics.

METAL

1. The bridge design is furnished to the contractor who retains engineering services to prepare fabrication and order list details. This was done by American Bridge Company.

2. These details were checked by Parsons, Brinckerhoff, Quade & Douglas.

3. The plans specify for each piece the various grades of steel that is to be used.

4. The standard procedures are as follows:

(a) The grade of material is specified;
(b) The inspection agent (Pittsburgh Testing Laboratory) gets certified mill test reports of the material supplied;
(c) Specifications call for Charpy test of all material;
(d) We have these tests;
(e) They were passing (indicated the material was satisfactory).

5. Metallurgical Engineers, Inc. took check tests from the fractured piece. They tested samples by the Charpy method:

(a) Perpendicular to the direction of rolling (perpendicular to the grain);

(b) Parallel to the direction of rolling (parallel to the grain);
(c) The samples did not pass the Charpy test perpendicular to the direction of rolling;
(d) They did pass parallel to the direction of rolling.

6. General good practice is to install the fabricated pieces with the direction of rolling parallel to the direction of grain; however, the specifications do not require this.

7. Many installations on this bridge are such that the metal is stressed perpendicular to the direction of rolling; e.g., splice plates in the girder web and splice plates in the deck plates.

DESIGN

1. PBQ&D say their initial work does not indicate that the plate was overstressed at the time of failure.

2. HNT&B indicate that the material probably was not overstressed.

3. Earl and Wright (the contractor's erection procedure consultant) say the material was not overstressed.

4. Richardson-Gordon say the material was not overstressed.

5. PBQ&D and NHT&B are both making further studies and analyses by finite methods. They are not at this time completely finished with their work. The work of Earl and Wright and Richardson-Gordon was initiated and paid for by the contractor and has not been available to us.

ERECTION

All four consultants say that no undue stress has been generated in the fractured piece by the erection method selected by the contractor.

Memo to File
January 12, 1972

PROCEDURE

1. As of the date of the conference (December 28), it appears appropriate for Legal Division to research court cases with respect to clause 104.30 of the General Specifications and give us advice in view of previous court cases.

2. The reports of PBQ&D and HNT&B will be carefully studied and compared with work being done in our own shop in order that all studies as to actual stresses may be reconciled.

3. At that time, a conference should be held with the contractor, his two consultants, our people, and our two consultants to arrive at a plan of procedure with respect to completion of the structure.

Tom

Tom Edwards
State Highway Engineer

TE:ms
cc F. B. Klaboe
A. E. Johnson
Walter J. Hart
H. S. Coulter - attention Ed Hardt
L. I. Lindas

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OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon
January 10, 1972

To: Walt Hart
Bridge Engineer
Salem, Oregon

Att: Ellison

SUBJECT: Fremont Bridge Superstructure
Stadium Freeway
Contract No. 7276

Request From MEI for
Information about
X-Ray Film

By the attached memo MEI asked for detailed report on the radiographs taken in California. To my knowledge such a report does not exist but if one does it would be in the bridge section where all the X-Ray film is filed.

Ed Rief accepted the X-Rays refered to in the last paragraph. We were told they were clear. I assume that MEI would like to know our acceptance standards and I feel this can best be furnished by the man in mechanical engineering section who reviews all X-Ray film.

Please return the answer to this office and I will forward them to the proper man at MEI.

NOTED
A. E. JOHNSON

Respectfully,

R.O. Cunningham
Resident Bridge Engineer

ROC:dgh

cc: Edwards
Colter
File

RECEIVED
JAN 11 1972
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
TOM EDWARDS

Trans. by HG
12-28-71
Dis. by M. V.

TO: State of Oregon
Department of Highways

Ref. No. 707013

Date: 12-27-71
- 4 JAN 71

Bob Cunningham

SUBJECT: FREMONT BRIDGE GIRDER FAILURE
Radiographic Inspections

We received from the client several packets of film, i.e.:

1. Six packets of 4 x17 film.
2. Four packets of 11 x 17 film.
3. Two packets of 6 x 17 film.

The six packets of 4 x 17 are Pittsburgh Testing Laboratory radiographs and we have no reports for these film. We need the detailed reports. These from Pittsburgh contain no reports that I have been able to find. These apparently were taken at Emeryville, California at the Murphy - Pacific fabrication shop.

The two packets of 6 x 17 film apparently were taken by X-Ray Engineering Company of San Mateo. These again have no reports either with the film or in the Fremont Bridge Girder Fracture specification book that we have.

The four packets of 11 x 17 film were made by Conam Inspection in Portland. There are x-ray reports contained in the envelopes. However the reports do not accept or reject, nor do they show any acceptance standards or specifications, indicating if these have been formally accepted or rejected.

RC / 4C

Are the reports available? What was the acceptance standard?

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OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
January 10, 1972

SUBJECT:

To:

Mr. Tom Edwards
Mr. F. B. Klaboe
Mr. A. E. Johnson
Mr. L. I. Lindas
Mr. V. E. Skoog

NOTED
F. B. KLABOE

The Claims Review Board met six times in 1971. Six new claim matters were considered and three of these did not have the contractor present but were to review settlments recommended by the Construction Section. The contractor was present to present his case on the other three new matters taken up in 1971 (Fountain Slide, Wilsonville-Hubbard and Fremont Superstructure). The West Linn Bridge claims were first presented in 1970 but were considered further in 1971.

When 1971 ended, there were unresolved items on three projects which have been before the Board. A list of these is attached.

John A. Bond, Secretary
Claims Review Board

JAB:fw
Attach.

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OFFICE OF
STATE ENGINEER

SUMMARY OF 1971 CLAIM BOARD REVIEWS

Claim Review No.		Amount Claimed	Review Action Amount	Contractor Acceptance
24	Willamette River (West Linn) Bridge - Painting	$177,180.76	$18,500	No
24 (a)	Willamette River (West Linn) Bridge - Temp. Bracing	$ 36,849.30	Denied	-
27	Fountain Slide Section	$329,067 (T)	Denied	Filed lawsuit
28 C	Rufus-Quinton	$ 93,252.59	$46,800 C	Yes
29	Wilsonville Interchange-Hubbard Interchange	$353,792 (T)	Denied	-
30 C	Lime Section	$ 10,852.54	$ 6,500 C	Yes
31	Fremont Bridge Super-Structure Time Only	448 days (T) = $448,000	162 days *	-
32 C	Siuslaw River (Mapleton) Bridge	$ 35,388.61	$24,364.62 C	Yes

* Part of claim still under consideration.

C Reviewed a Staff level recommendation - contractor not present.

T Claim includes some time liquidated damages.

JAB:fw
1-10-72

CLAIMS REVIEW BOARD

MATTERS PENDING

CONTRACT NO. 7124 - Fremont Bridge Piers

PKS Company submitted additional material dated December 21, 1971. (Being reviewed in field.)

CONTRACT NO. 7105 Willamette River (West Linn) Bridge

Box girder and wage escalation claims. Audit report is now available. Four-part grading claim is not answered. Painting claim is in court.

CONTRACT NO. 7276 Fremont Bridge Superstructure

Interim extension was granted for 162 days out of 448 days requested. Balance associated with casting problems to be researched by Mr. Lindas.

JAB:fw
1-10-72

7276

8

FORM E-20

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
January 6, 1972

To: MEMO TO THE FILE

SUBJECT: Fremont Bridge
Contract 7276

THIS REPORT IS PREPARED IN CONTEMPLATION OF POSSIBLE LITIGATION AND IS REGARDED AS A PRIVILEGED DOCUMENT.

On this date, I met with Mr. Harry Czyzewski of Metallurgical Engineers, Inc. concerning tests on the fractured beam of the Fremont Bridge. Also attending were Ivan Merchant, Walter Hart, and Ed Hardt of the State Highway Division.

Mr. Czyzewski indicated that a report would be forthcoming to the Highway Division about January 12 and would indicate conditions found by its testing but would not necessarily contain explanations at this time. After viewing sample materials taken from the structure, Mr. Czyzewski indicated that there were three factors which were apparent:

1. There were definite heat-affected zones in the upper part of the bottom flange where the two webs were welded to the lower flange.

2. There appeared to be laminations in the steel of the lower flange and were in the lower portion of the flange. This would have been a result of the member being milled from a 6½-inch piece of steel since usually laminations appear in the middle of a rolled section.

3. The low Charpy V-notch tests in the direction of the beam itself and 90° to the direction of rolling would indicate a rather brittle material.

Mr. Czyzewski further stated that the break indicates a uniform stress level across the beam and a high stress level. Apparently the break started in three locations, under each web and about at the center of the lower flange.

A. E. Johnson
Assistant State Highway Engineer

AEJ:ja

cc Tom Edwards
Walter Hart
Ed Hardt

RECEIVED
JAN 6 - 1972
FOR FILING

I-405-8(17)303
7276

January 4, 1972

Mr. R. E. Simpson
Division Engineer
Federal Highway Administration
P. O. Box 300
Salem, OR 97308

464

Dear Sir:

Re: Fremont Bridge Superstructure
Contract 7276
FAP No. I-405-8(17)303
Your File 08-35-A6

We have your December 17 reply to our letter of November 30, wherein you request more complete support data for a time extension request of 162 days for the above project.

We have deleted the three days for harbor traffic delays and now request your concurrence in a time extension of 159 calendar days. A letter requesting additional time due to the delays in the production of the castings will be forthcoming. A more complete tabulation of the delays beyond the control of the contractor is as follows:

1. Mail Strike

The mail strike delayed transmission of shop detail drawings and correspondence among the consultant engineers, Parsons, Brinckerhoff, Quade and Douglas; American Bridge Company; and Murphy Pacific Enterprises in San Francisco. Shop drawings were made by American Bridge Company in Los Angeles and sent to Parsons, Brinckerhoff, Quade and Douglas in New York City. The delays in receiving approval delayed the ordering of material and disrupted the production schedule at the plant. Fabrication of structural steel was a time critical element, and

the ten days' delay time due to the mail strike (March 18 to March 27, 1970) is our best estimate of the delay to the project.

Contractor Delayed 10 Days

2. Stiffener Installation

From July 25 to July 31, 1970, 22,605 pounds of additional stiffeners were installed in the tie girders between Panel Point 0 and Panel Point 3 under Price Agreement No. 6. This was a design change required by the consulting engineer to prevent overstress in the completed structure. The contractor had requested 22 additional days but since some of this work was done at the same time as revisions at Panel Point 3, we recommend that only seven days be allowed for this item.

Contractor Delayed 7 Days

3. Panel Point 3 Revision

Unforeseen work was done to the tie girder bottom flange near Panel Point 3 when the welded joint for this piece cracked on August 21, 1970. The crack occurred on the forward machined junction piece at the re-entrant corner on Girder 205G1R only. It was necessary to modify the joint, reweld the plate, and stress-relieve the weld under Price Agreement No. 2. Work on a total of four plates with the resulting production and scheduling delays until November 22, 1970 entitle the contractor to additional time.

Contractor Delayed 94 Days

4. Weld Repair - Girder 205G1R

After shipment to Portland, cracks were found in the welds of the above girder. Although the repair of such cracks is the responsibility of the contractor, the State spent 34 days from June 25 to July 29, 1971 exploring the extent of the crack and studying alternate repair procedures. On July 29, 1971 a weld repair procedure was accepted by the State and the repair work begun by the contractor. Although the contractor was able to do other work within the above period, a

critical item in job progress at this time was the release of the falsework at this girder, which was held up by this delay.

Contractor Delayed 34 Days

5. Railroad Restrictions

During the six days from August 14 to August 20, 1971, the contractor was prevented from erecting steel over the railroad tracks, which delayed the project completion. Although Section 7-28 of the Special Provisions for this project state that the contractor shall have no claims for damages or extra compensation in the event his work is held up by the work of the railroad forces, no mention is made of extension of contract time. Paragraph (b) of the same section states that the contractor shall cooperate with the railroad where work is over or under the tracks in order to avoid interference with the operation of railroad equipment. The contractor did in fact cooperate with the railroad but in so doing he delayed critical structural steel erection during this time. The Burlington-Northern Railroad insisted that the contractor not be allowed to block the throat of the switch yard while the circus train had the center yard blocked. Since this was an unforeseen occurrence, the contractor is entitled to additional time.

Contractor Delayed 6 Days

6. Unsafe Work Days

Six days between August 31 and September 28, 1971 were considered by the engineer to be unsafe and hazardous to workmen because of unusually high winds and rain during erection of the superstructure. A calendar-day count for completion of the contract would require the contractor to work on this unique type of structure regardless of the unusual hazards involved and would be in violation of the documents outlined below. In addition, the structural iron workers themselves reserve the right to refuse to work because of unsafe working conditions and did leave the project on the above days, with the result that the time critical steel erection was halted.

Excerpts from the pertinent contract and federal documents that support the view that the contractor is entitled to additional contract time are as follows:

a. Standard Specifications for Highway Construction, 1964, Section 8-6, Temporary Suspension of Work

"...The engineer shall have the authority to suspend the work wholly or in part by written order, for such period as he may deem necessary due to unsuitable weather, to conditions considered unfavorable for the persecution of the work..."

b. Required Contract Provisions, All Federal-aid Construction Contracts, Form PR-1273, U.S. Department of Transportation, Federal Highway Administration, Section VIII. SAFETY; ACCIDENT PREVENTION

"...In the performance of this contract, the contractor shall comply with all applicable federal, state and local laws governing safety, health and sanitation. The contractor shall provide all safeguards, safety devices, and protective equipment and take any other needed actions reasonably necessary to protect the life and health of employees on the job..."

c. Safety and Health Regulations for Construction, Department of Labor, Title 29-Labor, Part 1518.20

"...no contractor or subcontractor for any part of the contract work shall require any laborer or mechanic employed in the performance of the contract to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous to his health or safety..."

Although the affected date of this provision is for contracts advertised on or after August 27, 1971, it is felt the provisions apply to the above project by virtue of Part 1910 shown below.

d. Occupational Safety and Health Standards, Department of Labor, Title 29-Labor, Part 1910

"...For example, whenever a standard promulgated

under the Contract Work Hours and Safety Standards Act and contained in 29 CFR Part 1518 is applicable to an employment and places of employment by virtue of the performance of a construction contract on a date before August 27, 1971, the corresponding standard prescribed by Part 1910.12 of new Part 1910 shall also become effective on the same date with respect to such employment and places of employment. However, this effective date provision shall not be deemed to relieve any employer of any duty under Section 5(a)(1) of the Act to furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or likely to cause death or serious physical harm to his employees..."

Contractor Delayed 6 Days

7. <u>The Labor Strike</u>

Due to a labor dispute, the structural iron workers walked off the project September 2 and September 3, 1971, at a time when structural steel erection, a contract time critical element, was in progress.

Contractor Delayed 2 Days

Since the contractor will be assessed liquidated damages soon, we request your early review and concurrence in 159 calendar days' extension of time.

Very truly yours,

Tom Edwards
State Highway Engineer

By

A. E. Johnson
Assistant State Highway Engineer

bc Tom Edwards
F. B. Klaboe
Walter Hart
H. S. Coulter
R. Cunningham

RJW:ag ja

CA 6

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

TO : Mr. R. L. Porter, State Highway Engineer
Salem, Oregon

DATE: December 17, 1971

In reply refer to: [illegible]-46

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

RECEIVED
DEC 22 1971
BRIDGE DIVISION

SUBJECT: Oregon Project I-405-8(17)303 - Fremont Bridge Section
Stadium Freeway - Contract No. 7276
Request of Time Extension

Copy of this to Ed Hoadt
12-22-71 asking for additional info.

Mr. Johnson's letter dated November 30, 1971, requests our concurrence in a recommended 162 day extension of contract time. In order that a suitable review of this request can be made, we request more complete support data outlining reasons and determinations of responsibility.

Based on the data submitted with your request, the following comments are offered for your consideration.

Ten days have been claimed due to a mail strike. We were unaware that any beams were shipped by parcel post! Seriously, the record should show how the mail strike relates to contract performance.

The stiffener installation and panel point 3 revisions are undoubtedly cause for additional time. The record should show what prompted the change, what sequence of events created the particular day count claimed and what effect this had on the total project progress.

Three days have been claimed for Harbor traffic delays. Support data should show the nature of action that caused this delay and how it is different or unusual from actions in the Harbor that could have been anticipated or provided for.

Current evidence indicates that the weld repair on Girder 205-G1R was as a result of a fabrication deficiency. For this reason, any delay problems resulting from this repair should be between supplier and contractor.

Six days have been claimed due to Railroad restrictions. Section 7-28 of the Special Provisions states that the Contractor shall have no claims for damages or extra compensation in the event his work is held up by Railroad forces.

Six days have been claimed due to unsafe workdays under the Federal Health and Safety Standards Act. We have been advised that participation cannot be allowed for added costs as a result of this act. We

(more)

NOTED
FOR FORWARDS

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

GPO 910.222

understand this ruling would also apply to time. Also, your specifications differentiate between "inclement weather" and "Acts of God" under the "Workday" definition of contract time. Accordingly, under the "Calendar Day" definition, inclement weather is not stated as an exception to chargeable time.

The two days charged to the Labor Strike should be allowable with a brief explanation of chronology and effects on total work progress.

RECEIVED
DEC 20 1971
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
DEC 22 1971
BRIDGE DIVISION

RECEIVED
JAN 6 - 1972
FORM 8-30 (REV. 10-65)
FOR FILING

Gen. Files

I-405-8(17)703
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon 97213
January 3, 1972

SUBJECT: Fremont Bridge
Contract No. 7276
Cracked Flange

To: R. O. Cunningham
Resident Bridge Engineer
B U I L D I N G

Pursuant to your request attached you will find a letter dated December 28, from PTL's Oakland, California office giving the sequence of construction of the girder sections 205 G1R and 205 G1L.

H. S. Coulter
Metropolitan Engineer

By:

Edward L. Hardt
Assistant Metropolitan Engineer

ELH:bp

Encs

cc: Walter Hart w/attach.
John Jenkins "

cy mailed

RECEIVED
JAN 5 1972
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
A. E. JOHNSON

RECEIVED
JAN 4 1972
BRIDGE DIVISION

PITTSBURGH TESTING LABORATORY
ESTABLISHED 1881
INSPECTING ENGINEERS AND CHEMISTS
5814 DOYLE STREET
OAKLAND, CALIFORNIA 94608

METROPOLITAN ENGINEER
RECEIVED
DEC 29 1971
ME AME AME MDE MDE MTE

AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AND AUTHORIZATION FOR PUBLICATION OF STATEMENTS, CONCLUSIONS OR EXTRACTS FROM OR REGARDING OUR REPORTS IS RESERVED PENDING OUR WRITTEN APPROVAL.

December 28, 1971

Our Order No. : PO-5628

Oregon State Highway Department
Metropolitan Section
5821 N. E. Glisan
Portland, Oregon

Attention: Mr. Edward L. Hardt
Assistant Metropolitan Engineer

Dear Mr. Hardt:

We have studied your letter of December 1, 1971 and believe we have compiled enough information to satisfactorily answer your questions.

Information was compiled from reports, non-destructive testing records, inspectors log books, and from inspectors who worked on the project.

The single most complicating factor is that the four bottom flanges were not identified as belonging to a particular 205 box. This makes it difficult to go back through the records and pick the specific day that a particular operation was conducted, on a particular bottom flange.

Following are the answers to the questions asked in your letter of December 1 1971.

1. The welding sequence followed was: First side pg to ph, ph to pk, pk to Pm, and Pm to Pn. After one side was completely welded the flange was picked up and turned over by means of two overhead cranes which were equipped with a rigging jig.

   With the second side up, roots of welds were air arced out and the roots were magnetic particle inspected.

   Each weld was made with the submerged arc process with approved rod and flux. Pre-heat temperatures were maintained and asbesto blankets were placed over the completed welds to control the rate of cooling.

RECEIVED
JAN 4 1972
BRIDGE DIVISION

Work began on the bottom flanges of 205 G1L and 205 G1R at about the same time. While one of these was being turned over the original crack occurred. After a repair procedure for the crack, and a method of removing re-entrant corners were approved, the first two bottom flanges were shipped complete to the Wickman & Rose Machine Works. The re-entrant corners were removed and the flanges were shipped back to the contractor. The final two flanges had the re-entrant corners removed from individual plates. This was done at a local machine shop. Fabrication of the final two bottom flanges was then begun.

2. Plate ph of 205 G1L was checked by means of dye pentrant and magnetic particle. No further cracks were noted.

3. The plates were laid out on fitting tables at the contractors shop. They were picked up by two cranes with a rigging jig and placed on a truck. The stress reliever used a crane with spreader bars to load and unload them. Our inspectors were present during these operations and did not notice any problems. However no measurements were made and no pictures were taken so the exact pickup points are unknown.

Fabrication sequence; It took about 2-1/2 days of steady welding to complete the four (4) butt welds in one 205 bottom flange. We obtained the following dates and remarks from our records:

October 8, 1970: Began repair of cracked flange for 205. Began stress relief of second 205 bottom flange.

October 13, 1970: Radiographic examination of repaired crack in first flange was conducted. Flange approved for stress relief.

October 15, 1970: Radiographed flange after stress relief. Evidently this was the second flange.

October 19, 1970: Radiographed flange after stress relief. Evidently this was first flange.

October 23, 1970: Welding of 205 boxes was in progress. Nearly every report from October 23, 1970 to January 16, 1971 has some mention of work on the 205 boxes.

November 12, 1970: The third and fourth bottom flanges were radiographed following stress relief.

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JAN 4 1972
BRIDGE DIVISION

We hope the above information proves helpful. Exact dates of stress relieving can be obtained from the time vs temperature graphs which were made during the heating and cooling process. If you have any further questions please contact us.

Very truly yours,

PITTSBURGH TESTING LABORATORY

Ralph F. Mikus, Manager
San Francisco District

RFM:pr

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JAN 4 1972
BRIDGE DIVISION

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JAN 6 1972
FOUNDING

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METALLURGICAL ENGINEERS, INC
ENGINEERING AND APPLIED SCIENCES

2340 S.W. CANYON ROAD
P.O. BOX 1048
PORTLAND, OREGON 97207
503/228-9663

working with MATERIALS ECOLOGY INDUSTRIAL PRODUCTS AND PROCESSES

Copy to FHWA 1-5-72

I 405-7(17)303
7276

TO: State of Oregon
Department of Transportation
Attention: Mr. Walter J. Hart,
Bridge Engineer
State Highway Building
Salem, Oregon 97310

CLIENT NO.

REFERENCE NO. 707015
(705062)

DATE: 12-31-71

NOTED
A. E. JOHNSON
CY Mailed 1-5-72

SUBJECT: INVESTIGATION OF IN-CONSTRUCTION CRACK IN GIRDER TRUSS JOINT AREA; FREMONT BRIDGE.

Memorandum Report 12-31-71;
Biweekly Work Report Summary.

from Harry Czyzewski, P.E.
Projects Director

The following items, as numbered on page 2, especially were pursued during this two-week period.

1.4 Sampling:
We sampled, for chemical analysis, the flange areas of the north girder junction piece and that of the south girder junction piece, per the drawing in the Ivan Merchant letter of 12-22-71.

1.5.1(.2) History of Construction:
We made a detailed review of the records of the ultrasonic and x-ray inspection available to us.

1.5.2(.1) Photographic Record:
We made additional detailed photography of the condition of the coupons.

1.5.4(.1) In addition to making detailed fractographic records, we started on the
(.2) macro examination and metallographic examination of Charpy bars and
(.3) of the "44-inch" plane.
(.4)

1.5.4(.5) Chemical Analysis:
We made a chemical analysis of the steel in the area of the Charpy coupons.

1.5.3(.2) We machined and tested sub-sized standard test bars for tensile properties in the longitudinal and transverse direction.

1.5.3(.3) We completed the machining and testing of the first three Charpy bars at plus 40 degrees, in the longitudinal direction of the original rolling of the steel junction piece. We further machined eight bars in the transverse direction and eight bars in the longitudinal direction for transition temperature Charpy V-notch properties, and for fracture toughness tests.

We submitted, for your approval, invoices based on biweekly accumulation of time, using our standard fee schedule procedure. This will serve for your budget control.

holding until agreement signed by Comm

c/sec HC:hg
cc: R.O. Cunningham
Ed L. Hardt

Item	Description
1.1	Determine cause(s) of cracks in structure. (Div. M)
1.2	Determine and identify cause(s) with respect to original material quality and subsequent fabrication procedures; and establish whether there were in any way defective such as to be a significant factor in the fractures.
1.3	Determine properties of steels and of weld-joints to serve as a basis for repair and/or correction of cracks and potential defects.
*1.4	Sample and trepan, as needed, to establish the above. (Div. W)
1.5	Specific phases of investigation, including the following.
.1	History of: (Div. M)
	(.1) Operation
*	(.2) Construction
	(.3) Failure
.2	Record of "As-Received" Condition: (Div. M)
*	(.1) Photography
	(.2) Sketch
	(.3) Write-up
.3	Flaw-Detection-Inspection (Div. F)
	(.1) Visual
	(.2) Magnetic Particle Inspection
	(.5) Ultrasonic
	(.4) Radiography
.4.1	Metallurgical: (Div. Y)
*	(.1) Fractography
*	(.2) Macro
*	(.3) Metallographic
*	(.4) Microhardness
*	(.5) Chemical (Div. A-B)
.2	
	(.1) EMP
	(.2) EM Scan
.3	Physical Tests: (Div. X[machining Div. W])
	(.1) Hardness
*	(.2) Static - machining*- Test for tensile and bend properties
	(.3) Dynamic - machining*, Cold bath set-up; Test for Charpy properties
	(.5) Fracture Toughness, machining; Cold Bath set-up, test for fracture properties.
.5.1	Load: (Div. I)
	(.1) Calculation, Fracture Mechanics
.2	Experimental Stress Determination: (Div. Z)
	(.1) Mechanical
	(.2) Photo Elastic
	(.3) Strain Gage

(*) Items on which MEI spent significant time during this two-week interval. See page 1.

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JAN 5 - 1972
FOR FILING

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
December 31, 1971

J-145-1(17)203
7276

To:

Memo to the Files

SUBJECT: Analysis of Fremont
Girder Fracture
Fremont Bridge
Contract 7276

On Thursday, December 30, 1971, a conference call was placed to Mr. Ed Johnson in the seattle office of Howard, Needles, Tammen & Bergendoff. On the conference call were Mr. Ed Johnson of HNTB and Messrs. Merchant and Hart of OSHD.

Mr. Johnson was questioned on the progress toward submittal of an interim report on the structural analysis of the fracture in the upstream tie girder of the west back span of the Fremont Bridge. Mr. Johnson indicated that the interim report will be mailed from the Seattle office on January 10, 1972. He was advised that three copies of the report, complete with backup calculations would be required and seven additional copies, complete except for the calculations, would be needed.

A proposal for a testing program to be used as verification of the stresses during the erection of the remainder of the structure was discussed. Mr. Johnson indicated that they have investigated a vibrating wire gage system which is furnished in this area by Shannon & Wilson. Mr. Johnson indicated that the procedures with this instrument look good, that recording of the stress changes can be done remotely and can be carried out continuously throughout the various stages of erection. The cost of these units is approximately $150 to $200 per unit installed. HNTB will submit a proposal incorporating the above-described testing procedure along with the interim report.

Mr. Johnson was questioned on the procedures being followed on the finite element analysis. It was suggested that several trials of various configurations of the finite element pattern should be run. The final results should not be accepted until the minimum of two of these several trials are in reasonable agreement. Mr. Johnson indicated general agreement with the suggestions relative to the finite element analysis.

Walter J. Hart
Bridge Administration Engineer

WJH:dh
cc Tom Edwards
A. E. Johnson
H. A. Schell
Ed Hardt
R. O. Cunningham

NOTED
A.E JOHNSON

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JAN 3 1972
OFFICE OF
STATE HIGHWAY ENGINEER

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JAN 14 1972

I-405-8(17)
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

December 28, 1971

To:

SUBJECT:

MEMO TO THE FILE:

Fremont Bridge, 205 GIL Break 12/27/71

Report from Harry Czyzenski of MEI on progress to date of investigation.

Physical Tests

Charpy tests prepared from trepanned coupons cut from base metal. All tested at 40F:
Specimens parallel to break-
15.5,24.0, 16.5 ft. lb.
Specimens perpendicular to break-
10.0, 6.5, 6.5 ft. lb.
Hardness tests, Rockwell B Scale:

Base metal	84-86
Weld metal	79-83
Heat Affected Zone	90-93
In fracture area	80-86

Tensile Tests, reduced size, 4:1 length/diameter ratio:

Perpendicular to fracture-
Yield point 49,600 psi; ultimate 81,400 psi; elong. 24.5%; red. area 47%.
Parallel to fracture-
Yield point 53,000 psi; ultimate 81,000 psi; elong. 28.0%; red. area 66.8% .

Work in progress:

Preparing additional 16 impact specimens for transition temperature and fracture toughness determinations.

Making metallographic examinations of first Charpy bars. Will be followed by microscopic examination of fracture.

Chemical analysis underway on Charpy test specimens. Taking filings from transition block, north girder(GIR), to compare chemistry to see if it is from the same heat. (Differentiation will probably be based on trace elements since basic chemistry of the two heats is very similar.)

NOTED
A. E. JOHNSON

A photo record of the fracture surface, riverside of break, has been made.

Date previously supplied is being reviewed; xrays reviewed.

Progress at this time reduced because of year-end vacations.

John C. Jenkins
Engineer of Materials & Research

Metal	Design	Erection
ⓐ Details by Fab Sh. ⓑ Checked by PP&D ⓒ Plans specify grade ⓓ Standard procedure to specify grade ⓔ Inspection agent gets certified mill test report. ~~ⓒ We have no physical test reports~~ ⓓ Specs call for Charpy test information ⓔ We got Charpy tests ⓐ They were passing ⑤ MEI took check tests, metal tested ⓐ ⊥ to rolling = to rolling ⓑ did not pass ⊥ to rolling ⓒ did pass (barely) = to rolling ⑥ Specs do not require installation = to rolling ⑦ Many installations (splice plates in girder web & deck splices)	① BQD – to date Say – OK ② +NTB indicate maybe no ③ Earl & Wright Say OK ④ Richardson-Gordon Say nothing Get conference compare answers Probably late January	① PP&D Say OK ② Howard Needles Says OK ③ Earl & Wright says OK

Procedure 17/18/31

① Get legal division to research 107.30?

② Standby for reports
ⓐ Study reports

③ Generate Conference

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DEC 29 1971
FOR FILING

I-405-8(17)303
7276

December 28, 1971

Oregon State Highway Commission

Gentlemen:

As previously discussed with you, a failure occurred in the main girder of the west back span of the Fremont Bridge during erection procedures. It immediately became necessary to determine the cause of the failure and steps were taken in the following order:

(1) The designing firm of Parsons, Brinckerhoff, Quade & Douglas was requested to thoroughly restudy stress calculations to determine if an error had been made;

(2) The firm of Metallurgical Engineers, Inc. was retained to sample and test the material to determine if it met specifications.

(3) We retained an independent firm, Howard, Needles, Tammen & Bergendoff, to test the design calculations and stresses as a check.

All of these steps were cleared with the Federal Highway Administration and are reimbursable from Interstate funds.

The wording of the contract with Howard, Needles, Tammen & Bergendoff has now been agreed to by all parties and your confirmation of the agreement and the granting of the authority for the Secretary to sign on your behalf will be an item on the agenda for the January 11 meeting. I recommend your approval.

Very truly yours,

R. L. Porter
State Highway Engineer

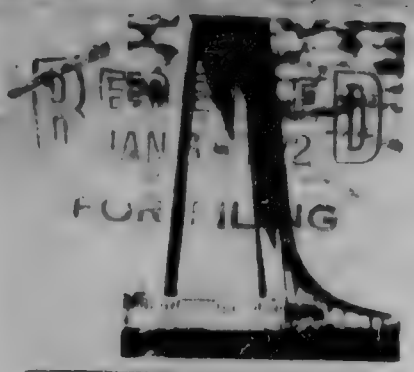
By

Tom Edwards
Deputy State Highway Engineer

cc Floyd Query
R. L. Porter
A. Z. Johnson
R. L. Schroeder
V. E. Skoog
L. H. Young

I. D. Merchant

TE:ms



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MURPHY PACIFIC ENTERPRISES

4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

I-405-8(17)203
7276

December 27, 1971
Fremont Bridge
Contract 7276

Oregon State Highway Department
Metropolitan Section
5821 N. E. Glisan
Portland, Or. 97213.

NOTED
A. E. JOHNSON

Attention R. O. Cunningham

Gentleman:

We are in receipt of your letter of December 20, 1971 regarding the cribbing at Panel Point O.

We are proceeding as directed in the above referenced letter. We are also installing a crib for the north girder as discussed with you to day even though we do not consider the north link in a hazardous condition.

Please find enclosed our drawing number 273-1 which indicates the cribbing required to develope strength of the webs in the lower horizontal box beam.

Yours Truly,

Edward D. Geer
Project Manager.

cy mailed 1-5-71

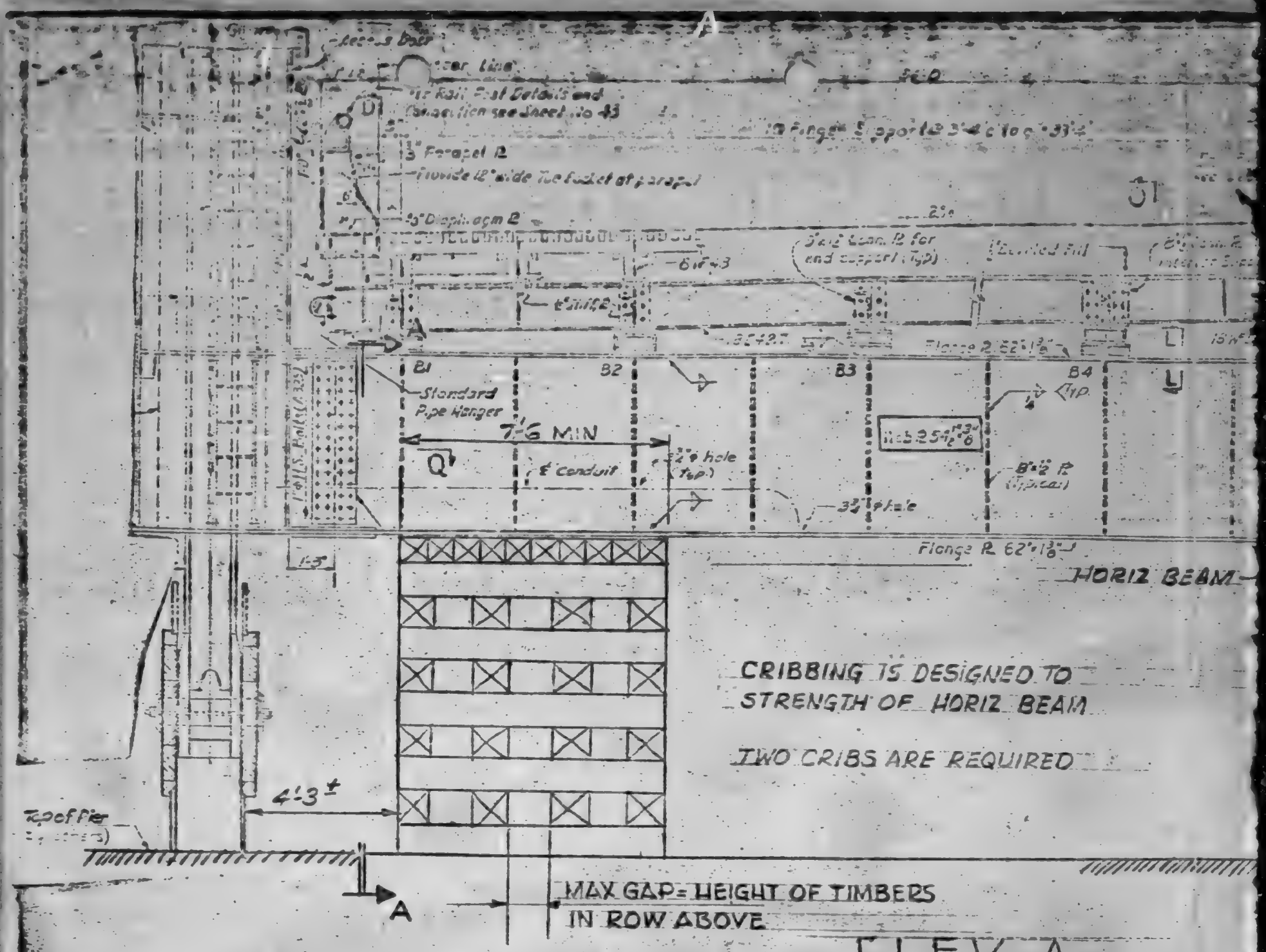
NOTED
TOM EDWARDS

cc: EDWARDS
MERCHANT
SCHROEDER

RECEIVED
DEC 29 1971
Resident Bridge Engineer

RECEIVED
DEC 3 1971
OFFICE OF
HIGHWAY ENGINEER

TELEPHONE (415) 653-1717 . CABLE 'MYPAC' . MAILING ADDRESS P.O. BOX 23007, OAKLAND, CALIFORNIA 94623

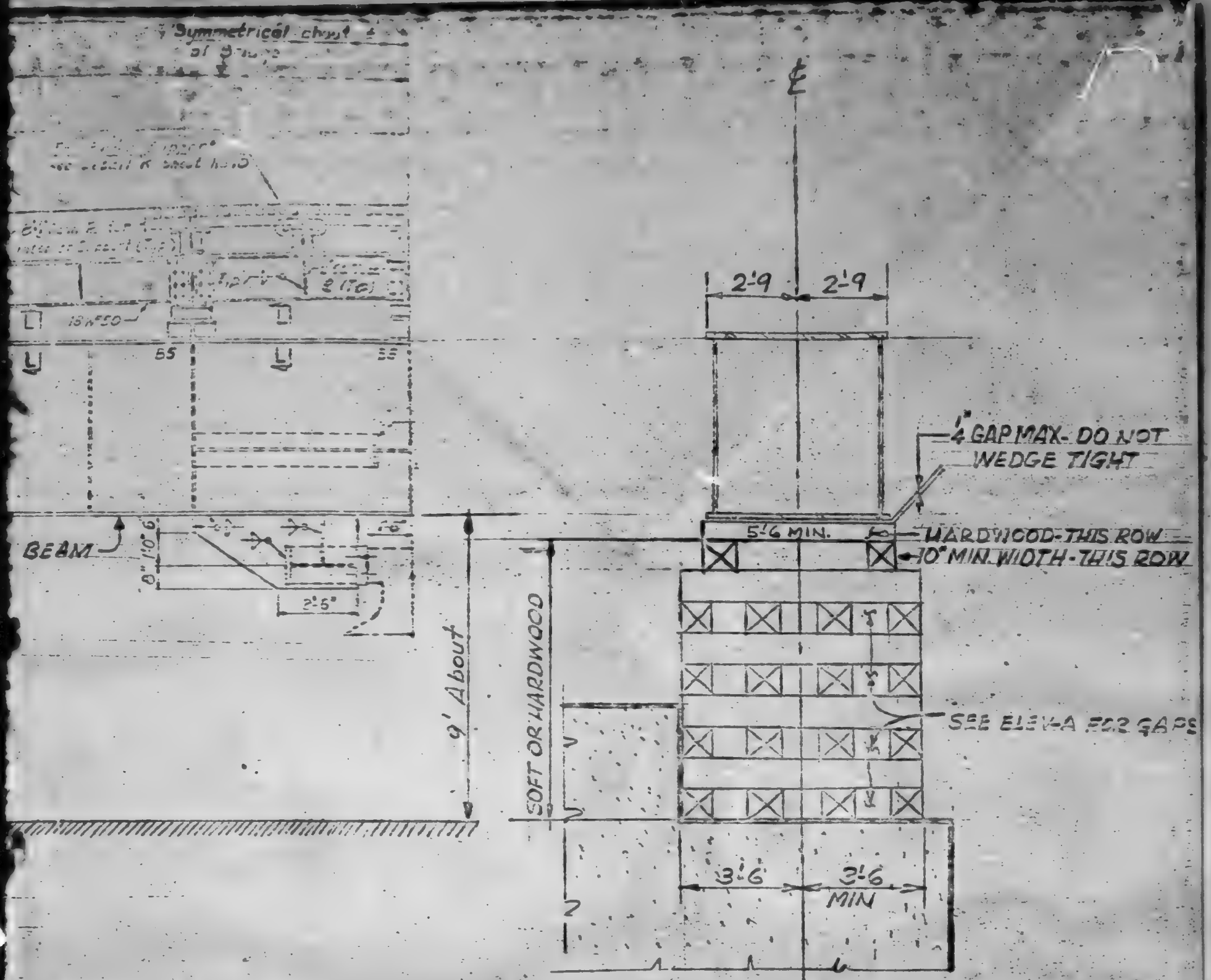


CRIBBING IS DESIGNED TO STRENGTH OF HORIZ BEAM

TWO CRIBS ARE REQUIRED

ELEV. A

cc: EDWARDS
MERCHANT
SCHROEDER



SECTION A-A

RECEIVED
DEC 29 1971
Resident Bridge Engineer

FREMONT BRIDGE	
MURPHY PACIFIC CORPORATION	
PANEL POINT O CRIBBING	
DWG 273-1	BY- 2AL 12-27-71

RECEIVED
JAN 3 - 1972
FOR FILING

Gen. Files

I 405-8(17)202
7276

Salem, Oregon
December 23, 1971

Fremont Bridge
Girder Fracture
Contract 7276

NOTED
A. E. JOHNSON

Memo to the Files

At 10:55 a.m., Wednesday, December 22, 1971, a conference call was placed to Mr. Silano of Parsons, Brinckerhoff, Quade & Douglas, in New York. On the conference call were Mr. Merchant and Mr. Hart of the Highway Division and Mr. Silano of PBQD. Mr. Silano was questioned on their progress to date on the fracture analysis for the upstream tie girder in the west back spa . Mr. Silano indicated that Mr. Hedefine is preparing a report for forwarding to Mr. Edwards describing their progress to date.

Mr. Silano indicated that they have run a space frame analysis of the structure. This analysis would indicate no change in the stress figures shown on the original contract drawings. They are also working on a finite element approach to the maximum stress in the tie girder at the point of the fracture. It was indicated that it will take two to three weeks before any results can be expected from this program. Mr. Silano said that they are also looking at a finite element analysis of the machined junction piece itself. He did not indicate when any results would be available from this program. Mr. Silano said that they had back-checked the shop drawings for the project and that there are three other possible locations where plates may be installed in the structure in a direction normal to rolling.

Mr. Merchant questioned Mr. Silano on the misalignment of the bottom deck cross strut at panel point 13 and the diagonal struts between panel points 12 and 13. Silano indicated that they are awaiting field measurements from Mr. Cunningham before they can make a determination on proper corrective procedures at this location.

maine hwy cy

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DEC 23 1971
OFFICE OF
STATE HIGHWAY ENGINEER

Walter J. Hart
Bridge Administration Engineer

WJH:dh

NOTED
TOM EDWARDS

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OREGON STATE HIGHWAY DIVISION

I 405.8(17)303
7276

HIGHWAY BUILDING • SALEM, OREGON • 97310

December 23, 1971

Metallurgical Engineers, Inc.
2340 S. W. Canyon Road
Portland, Oregon 97221

NOTED
A. E. JOHNSON

Attention Mr. Harry Czyzewski

Gentlemen:

Enclosed is a shipping notice carrying the invoice number 163-07238 and an accompanying letter-size sheet of chemical and physical tests. This invoice is for eight pieces of material that were to make up the machined junction pieces. Four pieces in 6 1/4 inch thickness carry two heat numbers. The other four in 5 1/2 inch thickness have one heat number. Our records do not indicate which of the plates represented by the two heat numbers in 6 1/4 inch thickness were used for the west back span machined junction pieces.

In a recent telephone conversation you indicated that by taking a small amount of material from the north girder for a chemical analysis that a determination could be made as to whether the machined junction piece in the north tie girder was from the same heat as the fractured piece in the south tie girder. A letter-size sketch is enclosed indicating where this sample may be obtained.

In completing the taking of the sample, please be sure that the quarter-inch radius is well faired out to prevent any notch effect.

12-23-71
Mechanical material to have samples taken from East side members taken
AEJ

Very truly yours,

R. L. Porter
State Highway Engineer
By
ORIGINAL SIGNED
IVAN D. MERCHANT
Ivan D. Merchant
Bridge Engineer

CH-mave 12-23-71

IDM:dh
Enclosure
cc A. E. Johnson /w/ encl.
R. L. Schroeder /w/ encl.
R. O. Cunningham /w/ encl.
L. G. Silano, PBQD, /w/ encl.
E. B. Johnson, HNTB, /w/ encl.

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DEC 23 1971
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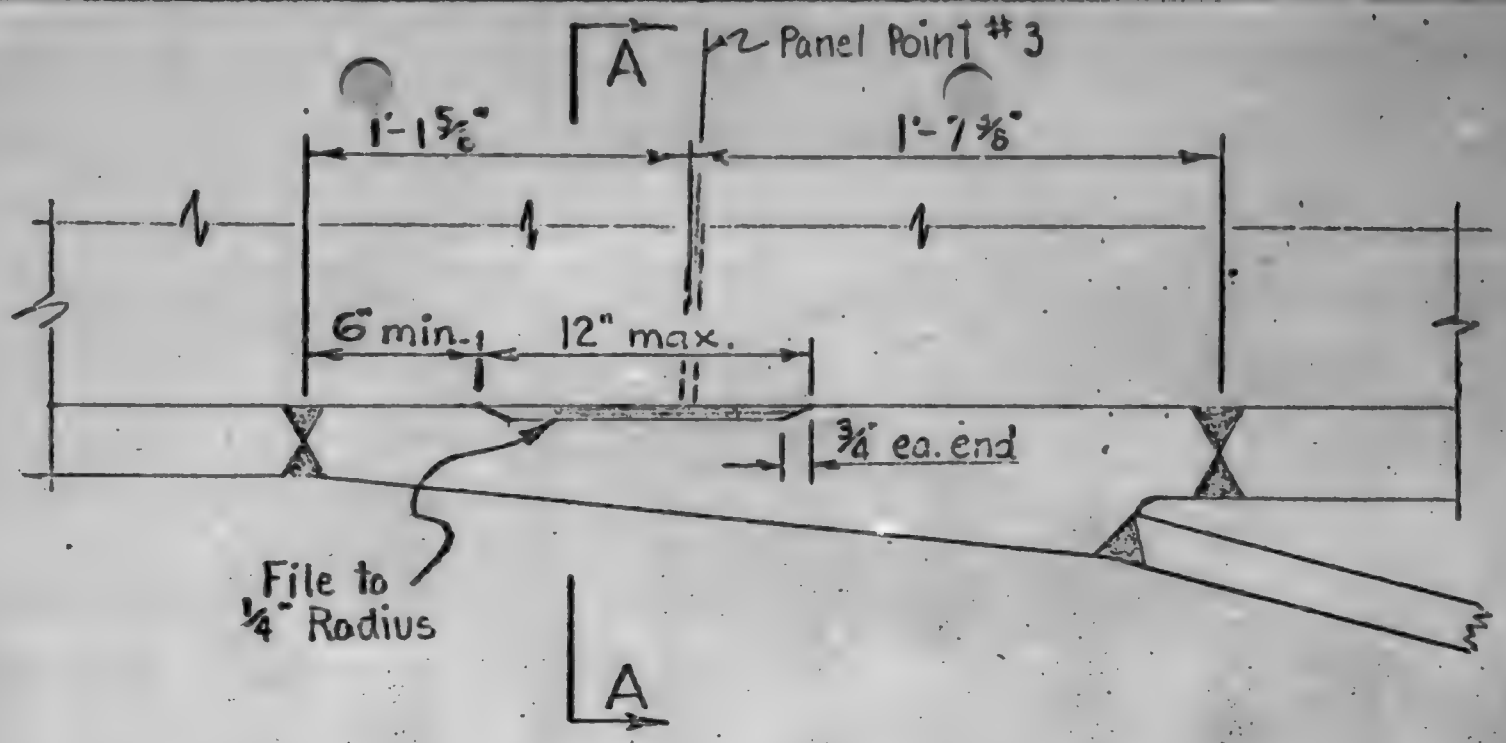
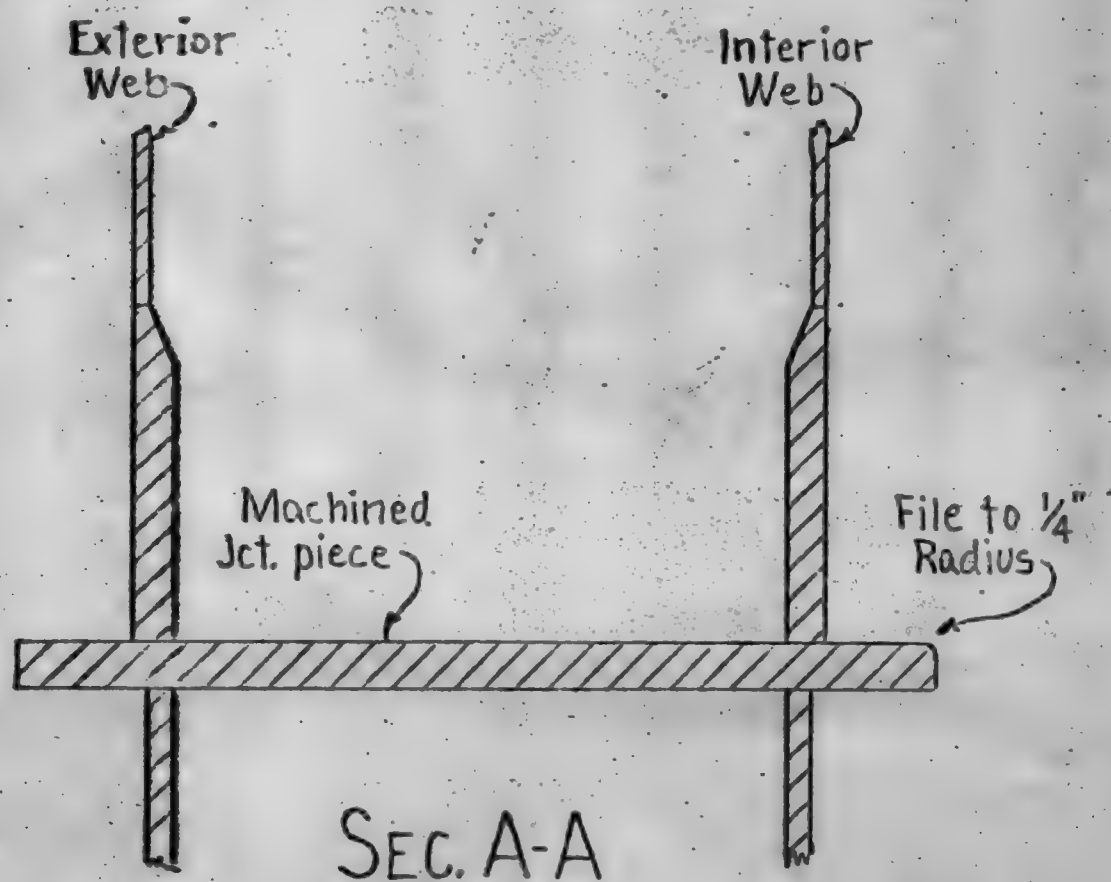
STATE HIGHWAY ENGINEER





SEC. A-A

OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

BOTTOM FLANGE SAMPLE
LIMITS @ PANEL PT. 3

APPROVED: Darwin W. Burkhart
BRIDGE ENGINEER

BRIDGE NO. 2529
DATE 12-22-71 DRAWING NO.
DRAWN A.C.M.

United States Steel Corporation

Mail remittance to
P.O. Box 1184 PITTSBURGH PA 15230

Customer Order	USS Order No.	Invoice Date	INVOICE NUMBER	Page
EK35130 01	ZZ-05042	1/25/70	163-07238	01

Car/Truck No.	Shipper's No.	Shipped From	Routing	
PLE 2288	00099	1/23/70	Homestead, Pa.	PPD URR PC TPW ATSF (SI #8)

Sold to
AMERICAN BRIDGE DIV
UNITED STATES STEEL CORP
105 OYSTER POINT BLVD
SO SAN FRANCISCO CALIF

Ship to
MURPHY PACIFIC ENTERPRISES
4300 EASTSHORE HIGHWAY
EMERVILLE CALIF

02

Terms CLEAR 1/2

Item No.	Units	Description	Quantity	Unit Price	Amount
		PLATES ASTM A588-68 GRADE A USS COR TEN B STEEL MECH M TESTS CHARPY IMPACT V NOTCH LONG M TEST AT PLUS 40 F CONFORMING TO THE REQUIREMENTS OF ASTM A370 PARA 23 FOR INFO ONLY			
02	4	6-1/4 X 34-1/2 X 66	16128		
	HEAT 71E891 PCS 2				
	69E859 2				
03	4	5-1/2 X 34-1/2 X 66	14192		
	HEAT 69E859 PCS 4				
	8	TOTAL	30320		

SHIPPING NOTICE ONLY

REFER 163-07239

B/L WT 103503 PRORATA 30320 2.59 785.29

ORIGINAL ... COPIES ... WHITE ... DISCOUNT ... DATE OF INVOICE ... THE ABOVE REPRESENTS ... IN CONFORMANCE WITH THE REQUIREMENTS OF THE FAIR LABOR STANDARDS ACT OF 1938 ... AS AMENDED

H-20897

UNITED STATES STEEL CORPORATION

METALLURGICAL DEPARTMENT

HOMESTEAD WORKS

FILE NO. _____

Report of CHEMICAL and PHYSICAL Tests of 0 H Plates 0 February 4 19 70

Charged to American Bridge Division U S S C Shipping Notice 163-07238 (7) 1/23/70

Shipped to Emeryville California Car Number PLE 2288

Customer's Order No. and Date	Mill Order No.	Heat No.	Slab No.	ANALYSIS C	Mn	P	S	Si	Cr	Ni	Test Piece Cut From	Yield Point lbs. per sq. in.	Tensile Strength lbs. per sq. in.	Elong. In 2" %	Red. of Area %	Bend Test
EK35130 01	ZZ05042	71E891 ✓		.16	1.17	.020	.024	.25	.58	.27	6 1/4"	56960	87670	27.0		OK
				Cu .32	V .06											
		Longitudinal V Notch Charpy Impact Tests 10 x 10 MM Made at Plus 40 Deg F. 55-68-35 Ft Lbs.														
"	"	69E859 ✓		C .17	Mn 1.18	P .011	S .022	Si .23	Cr .52	Ni .24	6 1/4"	54980	85190	32.0		OK
				Cu .31	V .05											
		Longitudinal V Notch Charpy Impact Tests 10 x 10 MM Made at Plus 40 Deg F. 50-52-62 Ft Lbs.														
"	"	69E859 ✓		C .17	Mn 1.18	P .011	S .022	Si .23	Cr .52	Ni .24	5 1/2"	59930	88650	27.0		OK
				Cu .31	V .05											
		Longitudinal V Notch Charpy Impact Tests 10 x 10 MM Made at Plus 40 Deg F. 80-75-90 Ft Lbs.														
		Plates and Tests as Rolled														
		PLATES ASTM A588-68 Grade A USS COR TEN B Steel Mech M Tests Charpy Impact V Notch Long M Test At Plus 40 Deg F Conforming to the requirements of ASTM A370 Para 23 Info Only														

STATE OF Pennsylvania
COUNTY OF Allegheny } ss

Subscribed and sworn to before me this 4th day of Feb A.D., 1970

Notary Public

My Commission expires

OTIS M. FAWCETT, NOTARY PUBLIC
HOMESTEAD BORO, ALLEGHENY COUNTY
MY COMMISSION EXPIRES MAY 25, 1973
Member, Pennsylvania Association of Notaries

_____, being duly sworn according to law, deposes and says that the figures set forth above are correct, as contained in the records of the company.

M W Maxson - Chief Met/lb

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F 41-8(17)363
7776

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
December 23, 1971

SUBJECT: Strain Measurement Techniques

To: Mr. Walt Hart
Bridge Administrator Engineer
Highway Office Building

NOTED
A. E. JOHNSON

John Jenkins asked that I write you in regard to strain measurements on the machined blocks on the Fremont Bridge.

There are relatively few methods of strain measurement. The more commonly used methods are:

1. Strain Gages
   a. SR-4
   b. Prewitt Scratch Gages
2. Exten-so-meters
3. Brittle Coatings
4. Photoelastic Methods

There are also optical methods, but these are not practical for this application.

I am sure you are familiar with the problems and results of the use of SR-4 Strain Gages. The Prewitt Scratch Gages are a possible solution. They have the advantage of recording all the strains undergone by the material to which they are attached. They do not, however, tell when these strains occured. They are also expensive, roughly $200 each.

The use of Exten-so-meters is possible, but not too practical. The sensitivity limit is rather high and it is a slow process.

Brittle coatings normally indicate the quality of strain. They are useful in the determination of areas of high strain (stress). By the use of coatings of various properties, it is possible to arrive at approximate stress levels. They are, however, a "one-shot" application. That is to say, only one loading or stress level can be read per application.

Photoelastic methods are one of the most practical methods to be considered. One big advantage is that with the application of a photo-elastic coating, the stress anywhere in the coating can be determined.

cy mailed 12-27-71

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Therefore, one does not need to know the point of maximum stress, just the general area. By varying the thickness of the photoelastic coating, various levels of stress can be measured. One chief draw back to the use of photoelastic coatings is that a platform would have to be available on the outside of the member so that readings could be made, as the method involved would be the reflected light technique.

We do not possess the equipment necessary to do the photoelastic analysis. The equipment and supplies to perform this type of analysis would cost about $4,000.

I can see only two of the possible methods being practical; strain gages, either SR-4 or Prewitt, or Photoelastic. In view of the ability to read stresses over a large area, therefore being able to locate both the maximum stress and the overall stress pattern, I feel that the Photoelastic method is the better one to persue.

All methods require the attachment of the sensing element before erection. Strain gages and photoelastic coatings are applied by the use of epoxies. Since epoxy cements cure in relation to the temperature, some method of heating the area will be necessary. The use of infra-red lamps would be practical.

If you desire any further information please contact me.

JOHN C. JENKINS
Engineer of Materials & Research

By

J. E. CHIDSEY
Structural Quality Control Engineer

JEC:eb

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FOR FILING

I-405-5(17)
7276
To:

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
December 21, 1971

SUBJECT: Tie Girder Fracture
Fremont Bridge
Contract 7276

Memo to the Files

On Tuesday, December 14, 1971, a meeting was held in the office of Mr. Cunningham, Resident Bridge Engineer. Those in attendance are listed on a following page. The purpose of the meeting was to hear a progress report from Howard, Needles, Tammen & Bergendoff on their analysis of the probable cause of the fracture in the west upstream tie girder of the Fremont Bridge. In summary, their preliminary findings to date are as follows:

1. The primary erection stress calculations, as shown on the erection drawings prepared by Earl & Wright for the contractor, appear to be essentially correct.

2. At the time of fracture, with the jacks at Falsework 2 lowered approximately 16 inches, the average flange tensile stress in the machined junction piece as computed by elementary structure theory is approximately 15,300 psi. A more sophisticated analysis by a programmed finite element approach indicates a maximum stress of 1.88 times this average stress or a maximum stress of 28,760 psi. With the jacks at Falsework 2 completely released, the average stress would be 22,300 psi with a maximum stress of 41,920 psi. The specified yield strength for A-588 steel in thicknesses over five inches, is 42,000 psi. The specified minimum tensile strength is 63,000 psi. In addition to the stresses indicated above, there may be residual stresses due to fabrication and erection which cannot be determined. The indication is, at this time, that if the material had the specified physical properties, a fracture should not have occurred at this stage in the erection.

3. A finite element analysis of the stress in the machined junction piece in the completed structure under full dead load, live load and impact indicates a maximum stress three times the average flange tensile stress. This would be a maximum stress of 48,000 psi. If the fracture had not occurred during the back span erection, a more serious stress condition would have existed in the completed structure.

NOTED
A. E. JOHNSON

4. The stress in the column link at Panel Point 0 exceeds the working stress limits but are less than the yield stress. As a safety factor to insure support of the end portal frame, temporary blocking should be placed under the portal frame. This temporary blocking should not be in bearing but would come into bearing only on failure of the column link. Mr. Tokerud and Mr. Schell of the FHWA concurred in this recommendation.

The program of testing of the samples being taken from the fractured girder was discussed with Mr. Harry Czyzewski of MEI. Mr. Czyzewski was particularly interested in the stress pattern as produced by the finite element analysis. This stress pattern approximates the profile of the fracture face.

A proposed instrumentation program to verify the stresses in the structure during the remainder of the erection was discussed. It was agreed that SR 4 strain gages do not work in the field. Several other systems of stress measurement were discussed and will be investigated further.

Walter J. Hart
Bridge Administration Engineer

WJH:dh

cc Tom Edwards
A. E. Johnson
E. L. Hardt
H. A. Schell
Ed Johnson, HNTB

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DEC 22 1971
OFFICE OF
STATE HIGHWAY ENGINEER

Meeting on Fremont Girder Fracture December 14, 1971.

In Attendance

Ed Johnson	HNT&B	Bellview, Wash.
Bob Crabtree	HNT&B	Kansas City
Herb Schell	FHWA,	Portland
Roy Tokerud	FHWA	Salem
Harry Czyzewski (In attendance during part of meeting)	MEI	Portland

Ivan D. Merchant
Ed Hardt
Bob Cunningham
Jim Broad
Robert Schroeder
H. S. Coulter
Walter J.-Hart

12/10/71

Fremont - River Bridge Job No. 2907-11-00

QUESTIONS

FABRICATION

1. Were side span frames fabricated in such a manner that they could have been pre-assembled on their side on the shop floor in an unstressed condition? If so, was this done?

2. Tie girder bottom flange sections (machined junction pieces and flat plates) were butt welded together, stress relieved and radiographed. : The top flange of the arch section was butt welded to the machined junction piece. — Was the machined junction piece inspected for cracks in the area of the failure at any time after the arch flange was welded on? Have such inspections been made since the failure?

ERECTION

1. Were blocks and cable ties (Sh. FE 5 of Erection Dwgs.) at the end portal in place at the time of the failure?

2. What construction loads were on the end span at the time of failure? Where was the orthotropic deck handling equipment?

3. Internal struts or cables and force applied? External temporary supports other than FWB 2?

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4. Outline basic philosophy of erection procedure.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

MADE BY RGL DATE 12-10-71 JOB NO. 2907-11-00
CHECKED BY _____ SEC. NO. _____
SHEET NO. _____

CALCULATIONS FOR Fremont Bridge - Portland, Oregon

Stresses in Tie Girder Bottom Flange and Arch under Full D+L+I. Per PBQD Plans

Tie Girder - Left PP 3

$P = 0 \quad M(+) = -39{,}600^{k\prime} \pm$
$\quad\quad M(-) = -160{,}000^{k\prime} \pm$

$$f(+) = \frac{39{,}600 \cdot 12}{21.860} = 6{,}500 \text{ psi } C$$

$$f(-) = \frac{160{,}000 \cdot 12}{21{,}800} = 27{,}600 \text{ psi } C$$

Tie Girder - Right PP 3

$P_{(+)} = 7600^{k} \quad M(+) = +68{,}000^{k\prime}$
$P(-) = 9080^{k} \quad M(-) = -41{,}500^{k\prime}$

$$f(+) \quad \frac{7600}{1246} + \frac{68{,}000 \cdot 12}{82{,}000} = 16{,}000 \text{ psi } T^{*}$$

$$f(-) \quad \frac{9080}{1246} - \frac{41{,}500 \cdot 12}{82{,}000} = 1{,}000 \text{ psi } C$$

* In corner of machined piece stress will be magnified by about 3.

or $f(+) \cong 3 \cdot 16{,}000 = 48{,}000$ psi

Arch Rib at PP 3

f max. 30,000 psi (C)

For Arch Rib at Tie Girder

$$f = \frac{9701}{357} + \frac{183 \times 12}{6440} = 27.4 \text{ ksi}$$

$F_1 = 16.0 \times 214.5 = 3430 \text{ k } (T)$
$F_2 = 27.4 \times 115.5 = 3170 \text{ k } (C)$

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DEC 15 1971
BRIDGE DIVISION

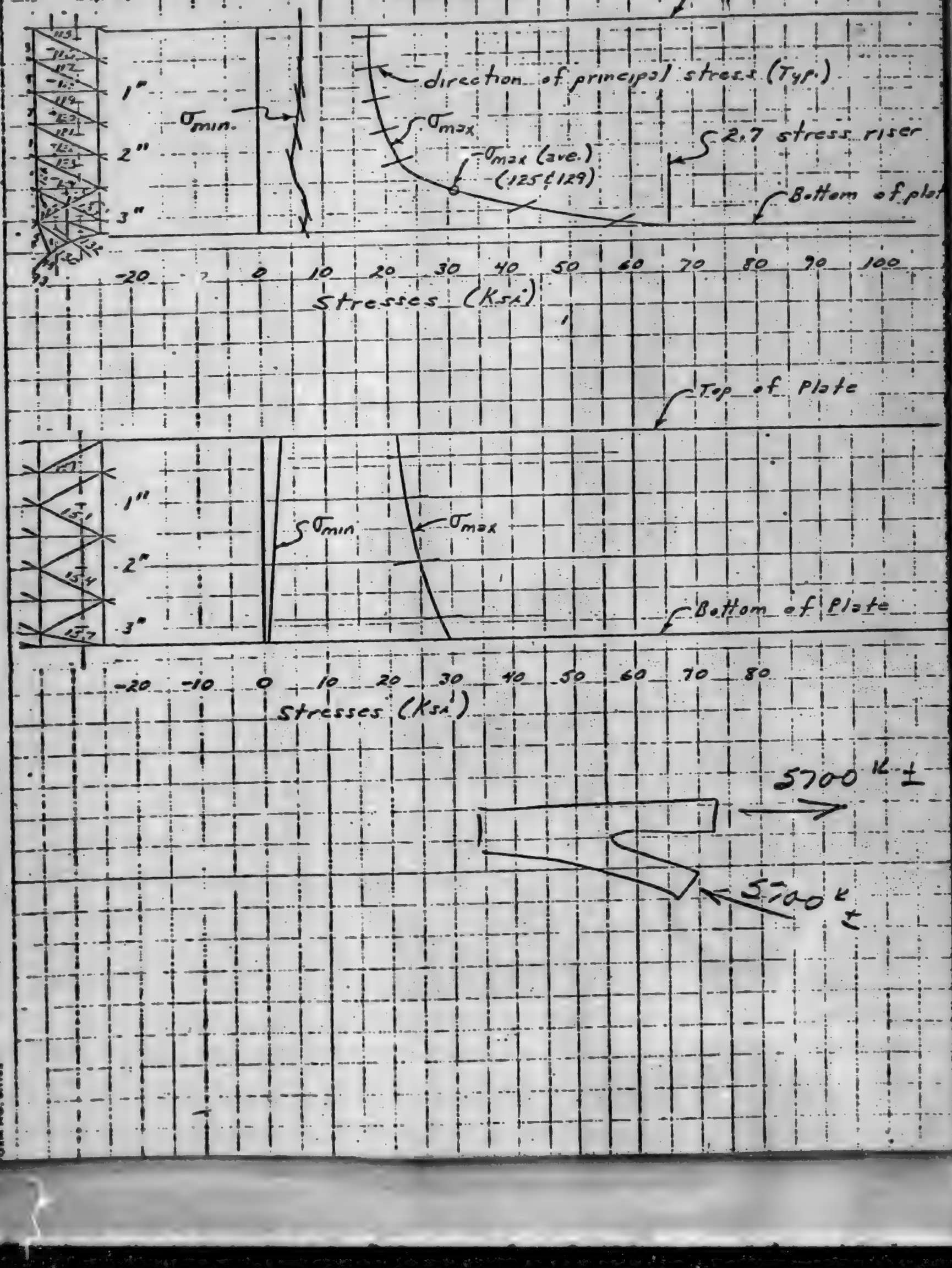
FORM NO. 6-1102

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

MADE BY J.O.E. DATE 12-8-71 JOB NO. 2907-11-00
CHECKED BY DATE SEC. NO.
SHEET NO.

CALCULATIONS FOR Fremont River Bridge (Failure)

Stresses in Tension Flange



FORM NO. 6.1163

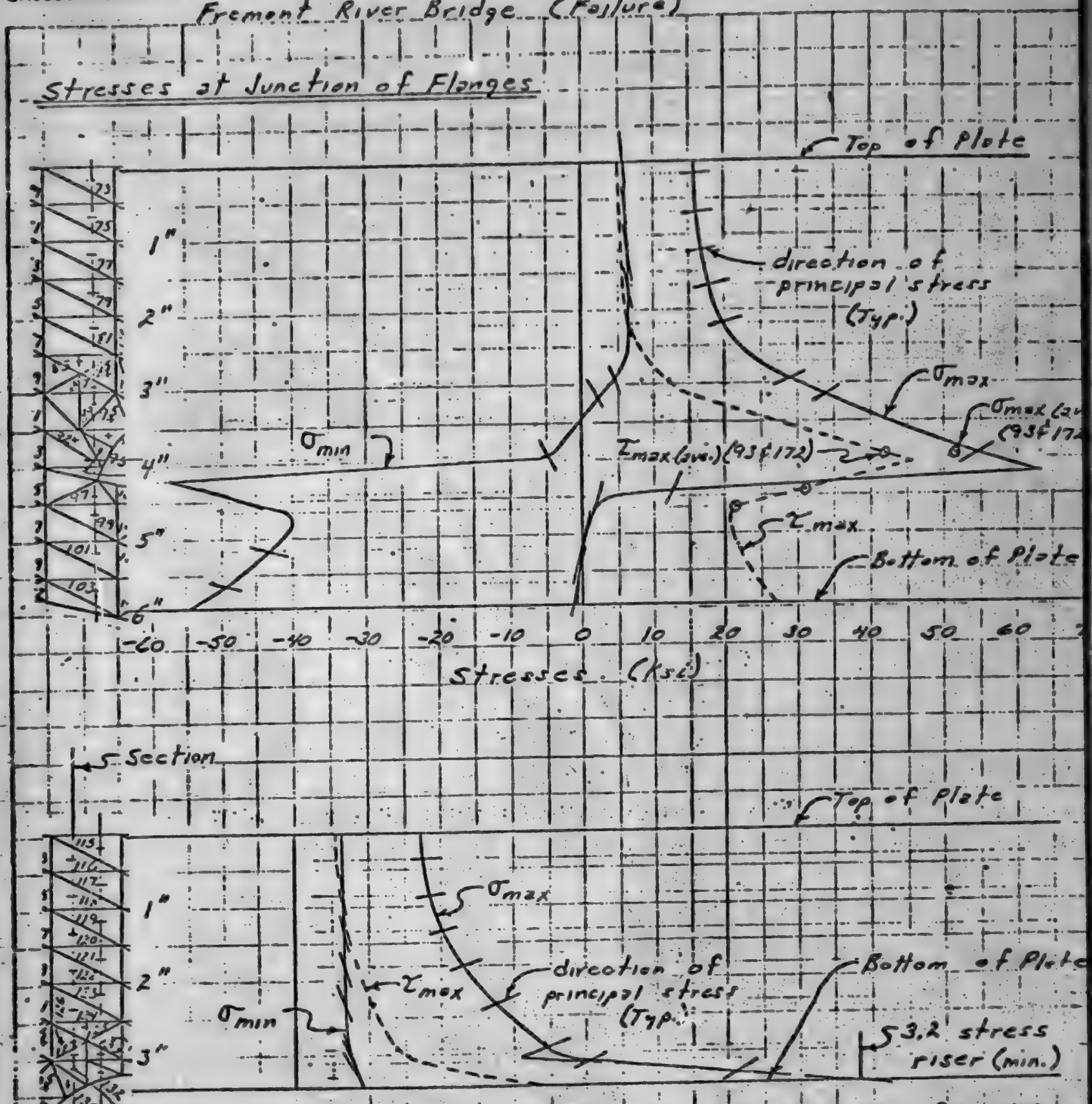
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

MADE BY J.O.E. DATE 12-6-71 JOB NO. 2907-11-C
CHECKED BY _____ DATE _____ SEC. NO. _____
SHEET NO. _____

CALCULATIONS FOR

Fremont River Bridge (Failure)

Stresses at Junction of Flanges



Actual D+L+I about 2/3 of the above

FORM NO. 6-7152

Ref. Alternate — Kolt. Was Used

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

MADE BY BLC DATE 12/10/71 JOB. NO. 2907-11-00
CHECKED BY DATE SEC. NO. D62
SHEET NO.

CALCULATIONS FOR

Fremont - River Bridge

INDEX OF CALC. SHEETS FOR MEETING DEC. 14, 1971

Description	Sheet No.
Assumptions for Input for Computer Frame. Analysis	A-1
Member & Joint Identification for " " "	A-2
Section Properties for " " "	A-3 — A-4
Side Span Dead Loads for " " "	A-5
Comparison of Member Forces	A-6
Girder Moment Diagram	A-7
Stresses in Machined Plate Near Line of Fracture	A-8 — A-9
General Observations Concerning Frame Analysis	A-10
Links at Panel Point D	A-11
Finite Element Analysis Sketches	F-1 — F-4
New Arch - Tie Connection	S-1.

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BRIDGE DIVISION

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

MADE BY BLC DATE 12/8/71 JOB. NO. 2907-11-0
CHECKED BY ____ DATE ____ SEC. NO. D62
SHEET NO. A-1

CALCULATIONS FOR

Fremont - River Bridge

COMPUTER FRAME ANALYSIS OF SIDE SPAN

ASSUMPTIONS FOR COMPUTER INPUT

GEOMETRY

Length of members and location of joints assumed to be same as completely erected bridge.

RESTRAINTS

External — Girder assumed free to rotate and translate horizontally at P.P. 0. Frame assumed free to rotate at bearing at P.P. 10. All temporary restraints assumed removed.

Internal — Ends of columns hinged except bottom end of column at P.P. 5 and both ends of column at P.P. 10. All other members assumed to have fixed joints. All temporary cables and struts assumed to have been removed.

LOADING

Loads applied at joints per dead load tabulation sheet in calcs. except no loads applied directly to supports (G0 & A10). Dead loads were calculated from cross sectional areas of steel components and a conservative allowance added for details.

No allowance was made for construction loads.

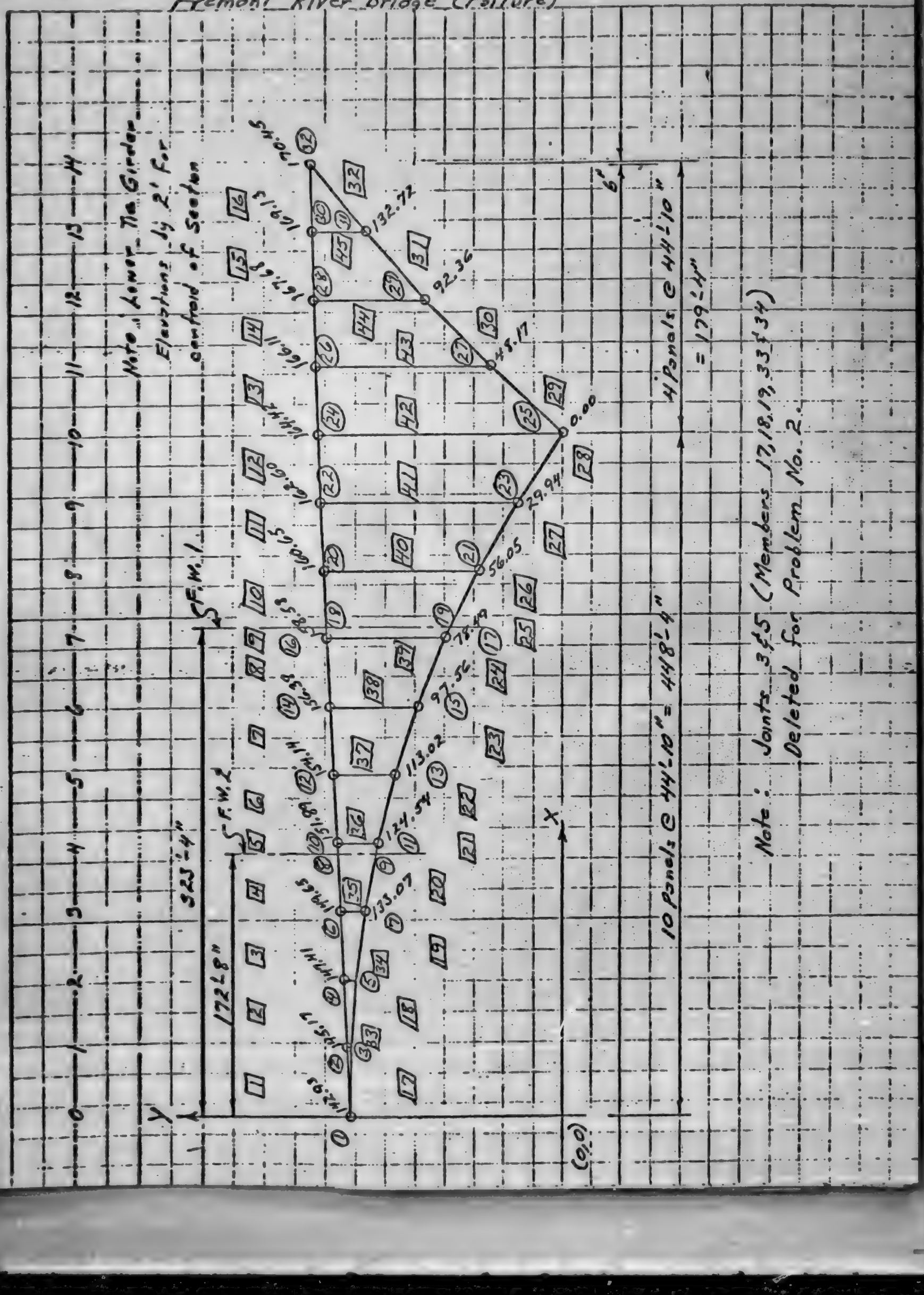
Deformations and/or induced loads from construction procedures were assumed to be negligible.

All side span structural steel assumed to have been erected at time of failure except lower deck framing between P.P. 2 and P.P. 4 and between P.P. 13 and P.P. 14.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

MADE BY J.O.E. DATE 11-9-71 JOB. NO. 2907-11-0
CHECKED BY B.L.C. DATE 11-18-71 SEC. NO. D6
SHEET NO. A-2

CALCULATIONS FOR Fremont River Bridge (Failure)



HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

MADE BY J.O.E. DATE 11-11-71 JOB. NO. 2907-11-09
CHECKED BY RLC DATE 11-18-71 SEC. NO. D62
SHEET NO. A-3

CALCULATIONS FOR Fremont River Bridge (Failure)

Member Properties - Arch Rib

$I = Ar^2$ Use A in ft^2, r in ft

Panel	m^2 A	ft^2 A	in r	ft. r	ft^4 I
3-4	322	2.24	18.86	1.57	5.53
4-5	322	2.24	18.86	1.57	5.53
5-6	322	2.24	18.86	1.57	5.53
6-7	345	2.40	18.98	1.58	6.00
7-8	345	2.40	18.98	1.58	6.00
8-9	368	2.56	18.78	1.56	6.23
9-10	368	2.56	18.78	1.56	6.23
10-11	437	3.04	18.86	1.57	7.50
11-12	414	2.88	18.70	1.56	7.01
12-13	414	2.88	18.70	1.56	7.01
13-14	414	2.88	18.70	1.56	7.01

Member Properties - Tie Girder

Assume $SM_G = SM_{net} \times A_G / A_{net}$

Panel	A_G	A_{net}	Top SM_{net}	Top SM_G	Bottom SM_{net}	Bottom SM_G
0-1	6.64			86,800		45,800
1-2	7.36			100,800		58,800
2-3	8.31			115,500		71,800
3-6	6.59	5.82	89,400	102,700	50,400	58,000
6-7	6.02	5.38	80,300	89,900	47,800	53,500
7-8	5.68	5.11	75,500	83,900	45,100	50,200
8-9	5.45	4.92	73,000	80,900	39,000	43,200
9-11	5.23	4.72	69,800	77,400	32,900	36,400
11-14	5.10	4.62	68,000	75,100	29,900	33,000

Member Properties - Tie Girder cor

$I = S_T C_T = S_B C_B$

$C_B = D - C_T$

or

$$\frac{S_T}{S_B} = \frac{D}{C_T} - 1$$

$$\therefore C_T = \frac{D}{\left(\frac{S_T}{S_B} + 1\right)}$$

$D = 18' \times 12'' + 9'' + t_{B.U. flg.}$

Panel	D	S_T/S_B+1	C_T	$I \times 10^4$ in^4 I	ft^4 I
0-1	226.8	2.89	78.6	683	330
1-2	227.5	2.72	83.6	844	407
2-3	227.5	2.61	87.2	1008	486
3-6	228.2	2.77	82.4	846	408
6-7	228.0	2.68	85.1	765	369
7-8	227.8	2.67	85.4	717	346
8-9	227.2	2.87	79.2	641	309
9-11	226.8	3.12	72.8	564	272
11-14	226.5	3.28	69.1	519	250

FORM NO. A-1167

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

MADE BY J.O.E. DATE 11-11-71 JOB. NO. 2907-11-06
CHECKED BY BLC DATE 11-18-71 SEC. NO. D62
SHEET NO. A-3

CALCULATIONS FOR Fremont River Bridge (Failure)

Member Properties - Arch Rib

$I = Ar^2$ Use A in ft^2, r in ft

Panel	m^2 A	ft^2 A	in r	ft. r	ft^4 I
3-4	322	2.24	18.86	1.57	5.53
4-5	322	2.24	18.86	1.57	5.53
5-6	322	2.24	18.86	1.57	5.53
6-7	345	2.40	18.98	1.58	6.00
7-8	345	2.40	18.98	1.58	6.00
8-9	368	2.56	18.78	1.56	6.23
9-10	368	2.56	18.78	1.56	6.23
10-11	437	3.04	18.86	1.57	7.50
11-12	414	2.88	18.70	1.56	7.01
12-13	414	2.88	18.70	1.56	7.01
13-14	419	2.88	18.70	1.56	7.01

Member Properties - Tie Girder

Assume $SM_G = SM_{net} \times A_G / A_{net}$

Panel	A_G	A_{net}	Top SM_{net}	Top SM_G	Bottom SM_{net}	Bottom SM_G
0-1	6.84			86,800		45,800
1-2	7.36			100,800		58,800
2-3	8.31			115,500		71,800
3-6	6.59	5.82	89,400	102,700	50,400	58,000
6-7	6.02	5.38	80,300	89,900	47,800	53,500
7-8	5.68	5.11	75,500	83,900	45,100	50,200
8-9	5.45	4.92	73,000	80,900	39,000	43,200
9-11	5.23	4.72	69,800	77,400	32,900	36,400
11-14	5.10	4.62	68,000	75,100	29,900	33,000

Member Properties - Tie Girder cor

$I = S_T C_T = S_B C_B$

$C_B = D - C_T$

or

$$\frac{S_T}{S_B} = \frac{D}{C_T} - 1$$

$$\therefore C_T = \frac{D}{\left(\frac{S_T}{S_B} + 1\right)}$$

$D = 18" \times 12^{3/4} + 9" + t_{e.p.\ flg.}$ $\times 10^4$

Panel	D	S_T/S_B+1	C_T	in^4 I	ft^4 I
0-1	226.8	2.89	78.6	683	330
1-2	227.5	2.72	83.6	844	407
2-3	227.5	2.61	87.2	1008	486
3-6	228.2	2.77	82.4	846	408
6-7	228.0	2.68	85.1	765	369
7-8	227.8	2.67	85.4	717	346
8-9	227.2	2.87	79.2	641	309
9-11	226.8	3.12	72.8	564	272
11-14	226.5	3.28	69.1	519	250

FORM NO. 6-1163

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

MADE BY J.O.E. DATE 11-12-71 JOB. NO. 2707-11-00
CHECKED BY B.L.C. DATE 11-18-71 SEC. NO. D62
SHEET NO. A-4

CALCULATIONS FOR Fremont River Bridge (Failure)

Member Properties - Post

Panel 4, 7, 12	2y	2y²	A	I
2-Fl. PL 16 x 1½			0.333	0.050
Web PL 16 x ⅜			0.042	0.006
2 Web PL 36" x ½	16.5	0.945	0.250	0.118
*Deduct 11" hole			0.625	0.174

Panel 5	2y	2y²	A	I
2-Fl. PL 16 x 5/8			0.139	0.020
Web PL 16 x ⅜			0.042	0.006
2 Web PL 36" x ½	16.5	0.945	0.250	0.118
			0.431	0.144

Panel 6	2y	2y²	A	I
2-Fl. PL 16 x 2½			0.556	0.082
Web PL 16 x ⅜			0.042	0.006
2 Web PL 36" x 5/8	16.625	0.959	0.312	0.150
			0.910	0.238

Panel 8	2y	2y²	A	I
2-Fl PL 23 x ⅜			0.239	0.073
Web PL 23 x ⅜			0.060	0.018
2 Web PL 36" x ½	23.5	1.916	0.250	0.240
			0.549	0.331

Panel 9	2y	2y²	A	I
2-Fl PL 31 x 1			0.431	0.240
Web PL 31 x ½			0.108	0.060
2-Web PL 36" x 5/8	31.625	3.48	0.312	0.542
			0.851	0.842

Panel 10	2y	2y²	A	I
2-Fl. PL 46¼" x 1 7/8"			1.203	1.48
2-Web PL 47 x ⅞	42125	7.71	0.571	2.20
			1.774	3.68

Panel 11	2y	2y²	A	I
2-Fl PL 26 x ⅞			0.316	0.12
Web PL 26 x ⅜			0.068	0.020
2 Web PL 36" x 5/8	26.625	2.46	0.312	0.384
			0.696	0.534

Panel 13	2y	2y²	A	I
2-Fl. PL 16 x ⅞			0.167	0.02
Web PL 16 x ⅜			0.042	0.00
2-Web PL 36" x 5/8	16.625	0.959	0.312	0.150
Web PL 46½ x ⅜			0.121	—
			0.642	0.181

FORM NO. 6-1107

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

CALCULATIONS FOR Fremont - River Bridge ... ERECTION CONDIT

LOAD —	PANEL					
	G0	G1	G2	G3	G4	G5
Upper Roadway Framing	33.3	84.3	93.4	84.3	93.4	84.3
Upper Rdwy. Wearing Surf.			(28.0)			
Lower Roadway Framing	26.0	56.0	28.0	(56.0)	—	56.0
Lower Rdwy Conc. Deck			(2.5)			
Wind Chord	2.5	5.0	2.5	—	—	5.0
Tie Girder	52.3	127.2	147.1	162.6	121.0	110.1
Arch Rib	—	—	—			
Arch Struts						
Arch Laterals						
Hangers, Columns & Frames	143.0	6.9	6.9			
TOTALS	257.1	279.4	(30.5) 277.9	(56.0) 246.9	214.4	255.4

LOAD	PANEL PO					
	G13	G14 & A14	A3	A4	A5	A6
Upper Roadway Framing	84.3	62.0				
Upper Rdwy. Wearing Surf.				(28.0)		
Lower Rdwy. Framing	—	—	—	28.0		
Lower Rdwy. Conc. Deck				(2.5)		
Wind Chord	—		(5.0)	2.5		
Tie Girder	78.1	36.9				
Arch Rib		50.7	43.1	62.9	64.1	68.3
Arch Struts					31.7	12.1
Arch Laterals					8.5	18.5
Hangers, Columns & Frames			(5.6)	7.1	8.2	25.1
TOTALS	162.4	149.6	(10.6) 43.1	(30.5) 100.5	112.5	124.0

Note: Numbers in parenthesis are weights of structur

MADE BY BLC DATE 11/12/71
Revised CHECKED BY BLC DATE 11/30/71
CHECKED BY JOE DATE 12/1/71

JOB. NO. 2907-11-03
SEC. NO. D62
SHEET NO. 9 of 9
FORM NO. 109-6-58
A-5

CTION CONDITION AT FAILURE =

SIDE SPAN DEAD LOADS

PANEL POINT								
4	G5	G6	G7	G8	G9	G10	G11	G12
93.4	84.3	93.4	84.3	93.4	84.3	111.4	84.3	93.4
-	56.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0
-	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
21.0	110.1	100.5	93.7	87.0	82.8	82.8	79.8	80.6
						93.1		
14.4	255.4	257.9	242.0	244.4	231.1	351.3	228.1	238.0

PANEL POINT								
5	A6	A7	A8	A9	A10	A11	A12	A13
								112.4
								2.5
64.1	68.3	72.6	77.3	82.8	103.4	116.4	107.7	103.0
81.7	12.1	12.1	12.1	12.1	-	18.0	18.0	-
8.5	18.5	20.4	20.8	21.3	33.3	44.3	42.6	20.9
8.2	25.1	26.2	32.0	62.9	187.0	46.5	24.2	9.2
2.5	124.0	131.3	142.2	179.1	323.7	225.2	192.5	248.0

ls of structural steel not erected at time of failure.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
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MADE BY BLC DATE 12/8/71 JOB NO. 2907-11-02
CHECKED BY ____ DATE ____ SEC. NO. D62
SHEET NO. A-6

CALCULATIONS FOR

Fremont - River Bridge

COMPARISON OF MEMBER FORCES -- HNTB CALCS. VS ERECTION DWGS.
ALL SIDE SPAN STRUCTURAL STEEL ERECTED, COLUMNS PINNED
(Refer to Case 1, Sheet ST1 of Erection Drawings)

P is Axial Force in kips -- M is Bending Moment in foot-kips.

SECTION	PANEL POINT	HNTB CALCS. P	HNTB CALCS. M	ERECTION DWGS. P	ERECTION DWGS. M
		TIE GIRDER			
0-1	1	—	54,147	—	58,741
1-2	2	—	95,778	—	105,577
2-3	3	—	123,573	—	138,832
3-4	4	281	140,989	374	161,005
4-5	5	298	141,641	378	162,100
5-6	6	320	127,082	406	148,706
6-7	7	338	96,426	415	119,006
7-8	8	351	50,767	419	73,343
8-9	9	366	-13,198	425	9986
9-10	10	370	-85,992	425	-58,445
10-11	11	267	-39,470	350	-22,799
11-12	12	299	-7508	354	642
12-13	13	316	4291	362	7405
13-14	14	327	206	386	-2697
		ARCH SECTION			
3-4	3	-302	1573	-424	1586
4-5	4	-309	1949	-438	2282
5-6	5	-323	1944	-467	2531
6-7	6	-331	1710	-479	2117
7-8	7	-349	1536	-487	1830
8-9	8	-339	601	-491	1090
9-10	9	-456	1731	-636	2511
10-11	10	-555	-3955	-616	-4110
11-12	11	-434	906	-475	1471
12-13	12	-446	-465	-485	-240
13-14	13	-410	+229	-502	-37
13-14	14	-410	-206	-468	1476

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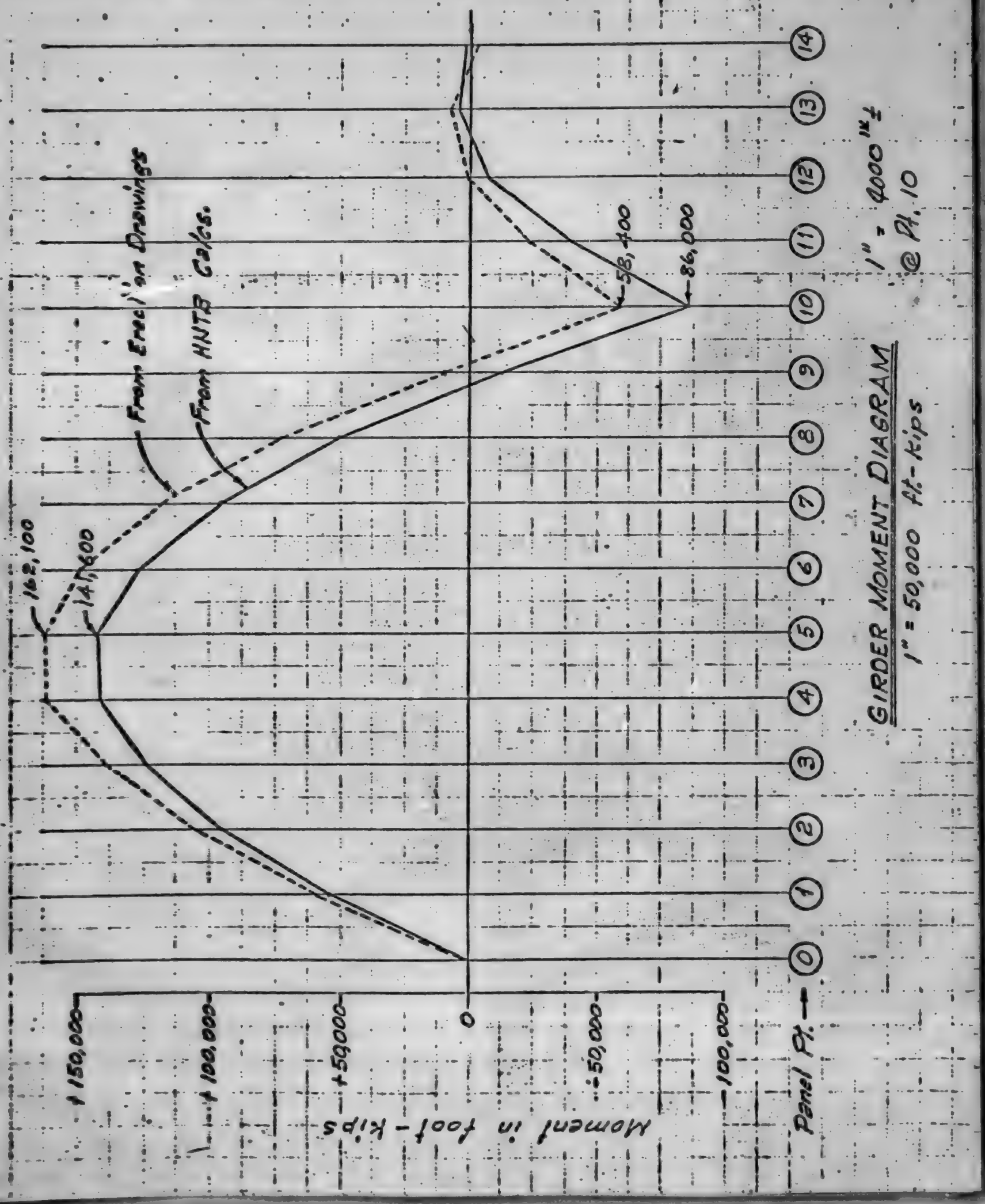
CHECKED BY _____ DATE _____ SEC. NO. D62
SHEET NO. A-7

CALCULATIONS FOR

Fremont - River Bridge

COMPARISON OF GIRDER MOMENTS -- HNTB CALCS. VS ERECTION DWGS.

ALL SIDE SPAN STRUCTURAL STEEL ERECTED, COLUMNS PINNED



GIRDER MOMENT DIAGRAM
Ft.-kips
1" = 50,000 Ft.-kips
1" = 4000 "K" @ Pt. 10

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CONSULTING ENGINEERS

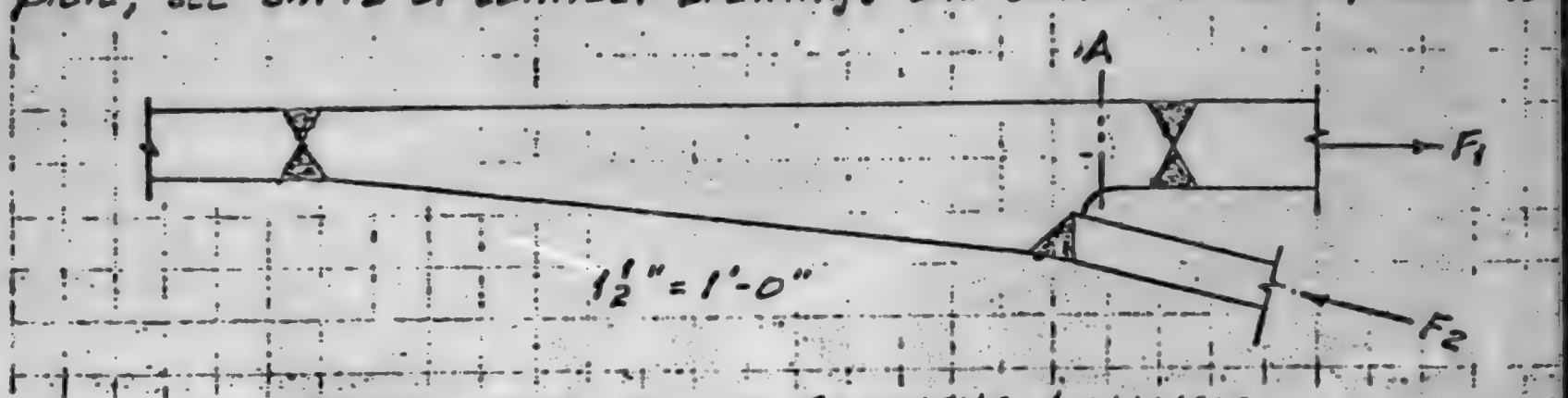
MADE BY BLC DATE 12-9-71 JOB. NO. 2907-11-
CHECKED BY ____ DATE ____ SEC. NO D62.
SHEET NO. A-8

CALCULATIONS FOR

Fremont - River Bridge

STRESSES IN MACHINED PLATE NEAR LINE OF FRACTURE

Fracture occured approximately 1.5' from Panel Point 3. Use member forces at P.P. 3, Section 3-4. For details of machined plate, see sh. 15 of contract drawings and sketch in correspondence.



FORCES FOR FINITE ELEMENT ANALYSIS

Case	Source	Condition	F_1	F_2
1.	Erection Dwgs.	Jacks at FWB 2 completely released	4780 K	461 K
2.	HNTB Calcs.	" " " " " "	3700 K	418 K
3.	HNTB Calcs.	" " " " lowered 16" *	3280 K	392 K

UNIT STRESS AT SECTION A

f = Average tensile stress in flange calculated from $\frac{P}{A} + \frac{Mc}{I}$

$f_{max.}$ = Maximum tensile stress in flange = 1.88 x f; per Finite Element Analysis (Residual stress from welding not included)

Case	f	$f_{max.}$
1	22.30 ksi	41.92 ksi
2	17.24 ksi	32.41 ksi
3	15.30 ksi	28.76 ksi

*Note: Case 3 does not correspond directly with jacking procedures used during erection, but was included as an indication of the effect of jacking.

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MADE BY BLC DATE 12/8/71 JOB NO. 2907-11-0
CHECKED BY ____ DATE ____ SEC. NO. D6
SHEET NO. A-9

CALCULATIONS FOR

Fremont - River Bridge

STRESSES IN MACHINED PLATE NEAR LINE OF FRACTURE

SECTION PROPERTIES

TIE GIRDER

Area of Section = 1246 □"

Area of Bottom Flange = 214.5 □"

S.M. for Average Stress in Bottom Flange = 82,000 in.³

ARCH SECTION

Area of Section = 357 □"

Area of Top Flange = 115.5 □"

S.M. for Average Stress in Top Flange = 6440 in.³

CASE 1

Member forces approximated from Erection Drawing Stress Sheets. Jacks at FWB 2 assumed completely released.

TIE GIRDER

$P = +402$ k, $M = 150{,}700$ ft-k

$f = \frac{402}{1246} + \frac{150{,}700 \times 12}{82{,}000} = 22.3$ ksi

$F_1 = 22.3 \times 214.5 = 4780$ k T

ARCH SECTION

$P = -451$ k, $M = +1460$ ft-k

$f = \frac{451}{357} + \frac{1460 \times 12}{6440} = 3.995$ ksi

$F_2 = 3.995 \times 115.5 = 461$ k C

CASE 2

Member forces from HNTB Calcs. FWB 2 removed.

TIE GIRDER

Section 3-4, P.P. 3 (Member 4, Joint 6)

$P = +300$ k, $M = +116{,}100$ ft-k

$f = \frac{300}{1246} + \frac{116{,}100 \times 12}{82{,}000} = 17.24$ ksi

$F_1 = 17.24 \times 214.5 = 3700$ k T

ARCH SECTION

Section 3-4, P.P. 3 (Member 20, Joint 7)

$P = -321$ k, $M = 1454$ ft-k

$f = \frac{321}{357} + \frac{1454 \times 12}{6440} = 3.61$ ksi

$F_2 = 3.61 \times 115.5 = 418$ k C

CASE 3

Member forces from HNTB Calcs. Jacks at FWB 2 lowered 16". Note that this does not correspond directly with jacking procedures during erection but is an indication of the effect of jacking.

TIE GIRDER

Total Defl. at FWB 2 = 1.48'

1.48' - 1.33' = 0.15'

Apply 100 k up at FWB 2 (Joint 8)

$P_6 = +21.75$ k, $M_6 = -7896$ ft-k, $\Delta_8 = .088'$

$P = 300 + \frac{.15}{.088} \times 21.75 = 337$ k

$M = 116{,}100 - \frac{.15}{.088} \times 7896 = 102{,}600$ ft-k

$f = \frac{337}{1246} + \frac{102{,}600 \times 12}{82{,}000} = 15.30$ ksi

$F_1 = 15.30 \times 214.5 = 3280$ k T

ARCH SECTION

Apply 100 k up at FWB 2 (Joint 8)

$P_7 = -19.46$ k, $M_7 = -98.0$ ft-k, $\Delta_8 = .088'$

$P = -321 - \frac{.15}{.088} \times 19.46 = -354$ k

$M = +1454 - \frac{.15}{.088} \times 98 = +1287$ ft-k

$f = \frac{354}{357} + \frac{1287 \times 12}{6440} = 3.39$ ksi

$F_2 = 3.39 \times 115.5 = 392$ k C

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MADE BY BLC DATE 12/10/71 JOB. NO. 2907-11-0
CHECKED BY ____ DATE ____ SEC. NO. D62
SHEET NO A-10

CALCULATIONS FOR

Fremont – River Bridge

GENERAL OBSERVATIONS CONCERNING FRAME ANALYSIS

1. STIFFNESS OF FRAME

For Erection Condition at the time Falsework Bent 2 removed.
Load and resulting deflection at location of FWB 2
Vertical Deflection for a 100 kip load:
0.106' per Erection Dwgs – 0.088' per HNTB Calculations

2. HORIZONTAL TRANSLATION OF FRAME

For Erection Condition at the time Falsework Bent 2 removed.
From HNTB Frame Analysis Calculations, assuming bearing at P.P.0 free to rotate and translate horizontally and bearing at P.P.10 free only to rotate:

(1) If frame erected in final position and released, entire tie girder would move westward approximately 9 inches.
(2) Upward load of 100 kips at Falsework Bent 2 would cause eastward translation of tie girder of 0.0405 ft. at FWB 2 and 0.0450 ft. at P.P.0.

3. BENDING MOMENT IN TIE GIRDER AT PANEL POINT 10.

Refer to Erection Drawings, Sheet ST1.
Case 1 is all side span structural steel erected, columns pinned.
Case 2 is suspended span being lifted, columns pinned.

Case	Moment in Tie Gdr. at P.P. 10	
	Per HNTB Calcs.	Per Erection Drawings
1	-85,992 ft.-k	-58,445 ft-k
2	-31,300 ft.-k	+ 4,546 ft-k

(If not resolved, follow-thru calcs. should be made)

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MADE BY JK DATE 11-1-71 JOB NO. 2907-11-00
CHECKED BY ____ DATE ____ SEC. NO. ____
SHEET NO. A-11

CALCULATIONS FOR Fremont Bridge

LINK AT PANEL POINT 0

SECTION PROPERTIES

Section	A in²	y̅ in.	Ay²+I₀ in⁴
Pl. 14.13 = ½	7.06	-	-
2 Flgs. 19×2	38.00	-	2 070
	45.06	r = 6.78	~~2 070~~
	90.125		2287

L = 509.1 $P_{cr} = \frac{\pi^2 \times 29000 \times 2070}{509.1 \times 509.1} = 2285^k$

South Link bowed 2¾"

$\Delta = \frac{.104 \times PL^2/EI}{1 - P/P_{cr}}$

$2.75 - \frac{2.75P}{2285} = \frac{.104 \times P \times 509.1}{29000 \times 2070}$

$2.75 = .00121P + .00045P = .00166P$

$P = \frac{2.75}{.00166} = 1715^k$

North Link bowed 1⅛"

$1.125 - \frac{1.125}{2285} P = 0.00045\ P$

$1.125 = .00049P + .00045P = .00094P$

$P = \frac{1.125}{.00094} = 1195^k$

Stresses in Links (Erection)

South Link

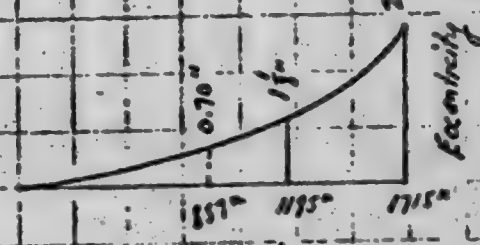
P/A = 1715 000 ÷ 45.06 = 38 100 psi
Mc/I = ± 2.75 ÷ 217.5 = ± 21 700
59 800 psi

North Link

P/A = 1195 000 ÷ 45.06 = 26 500 psi
Mc/I = ± 1.125 ÷ 217.5 = ± 6 180
32 680 psi

Stresses in Links (Positive D+L+I)

D+L+I Max = 26 889 ÷ 44.83 = 600ᵏ C
DL at Point 0 = 257
857ᵏ C



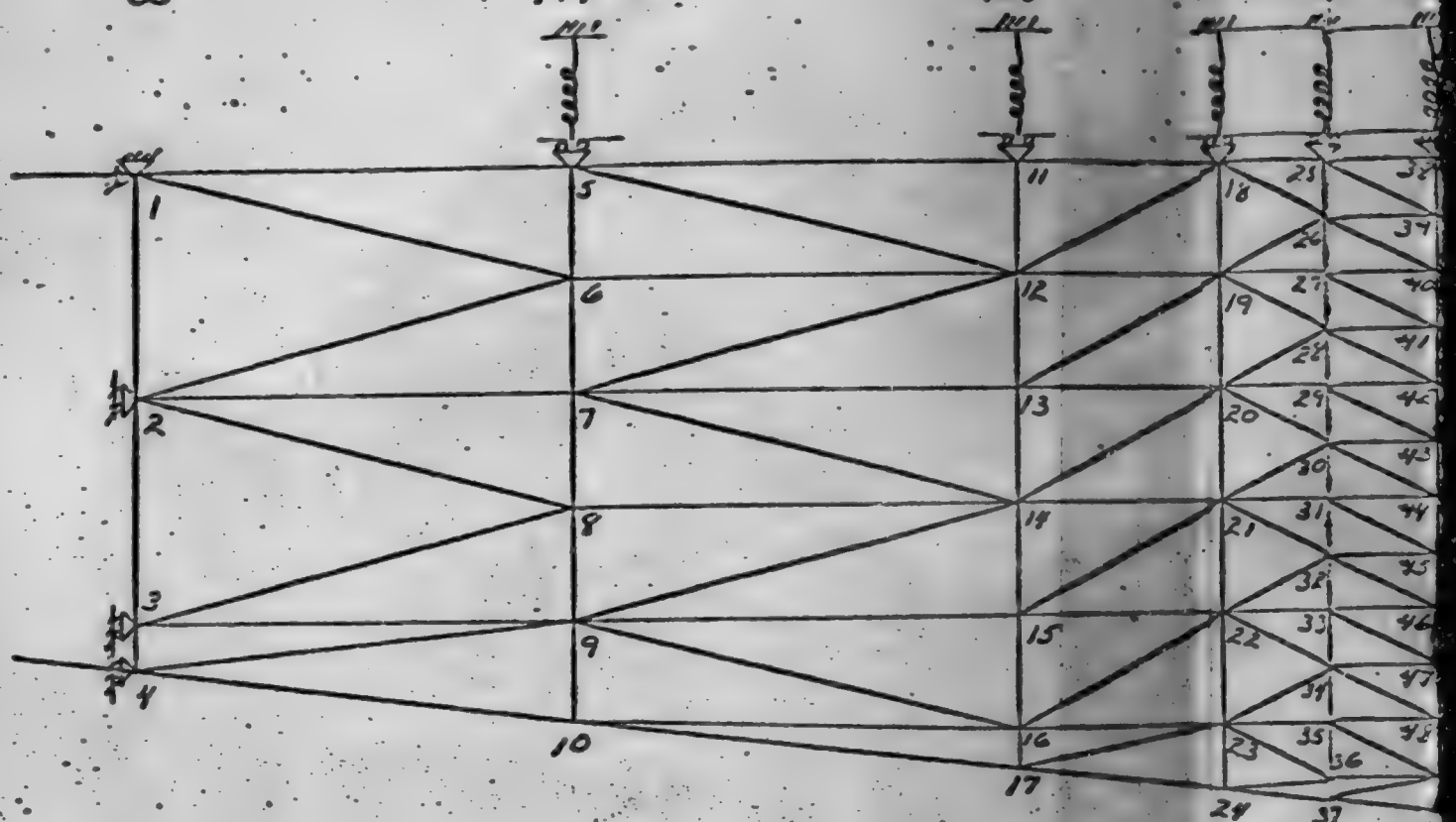
P/A = 857 000 ÷ 45.06 = 19 000 psi
Mc/I = ± 20.70 ÷ 217.5 = ± 2 760
21 760 psi

FORM NO. 6.1103

CALCULATIONS FOR Fremont River Bridge (Failure)

Spring Constants (K/in)

Run 1	∞	∞	∞	∞	∞	∞
Run 2	∞	149	108	54	36	36



Joint Numbers - Finite

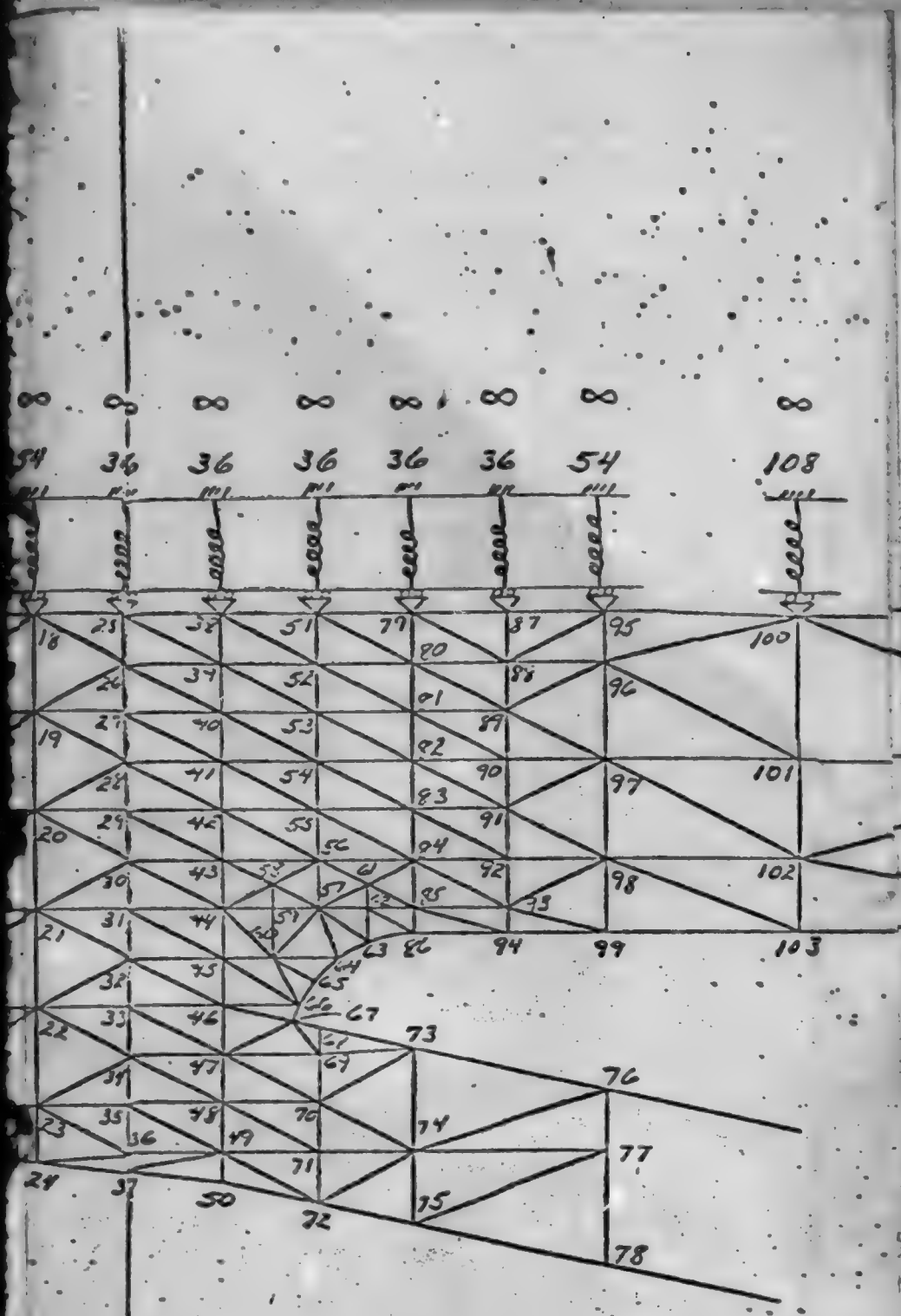
Scale : $\frac{1}{2}$" = 1"

JOB NO. 2907-11-00 SHEET NO. F-1

MADE BY J.O, F. DATE 12-10-71

CHECKED BY _____ DATE _____

BACK CHECKED BY _____ DATE _____



s - Finite Element Run

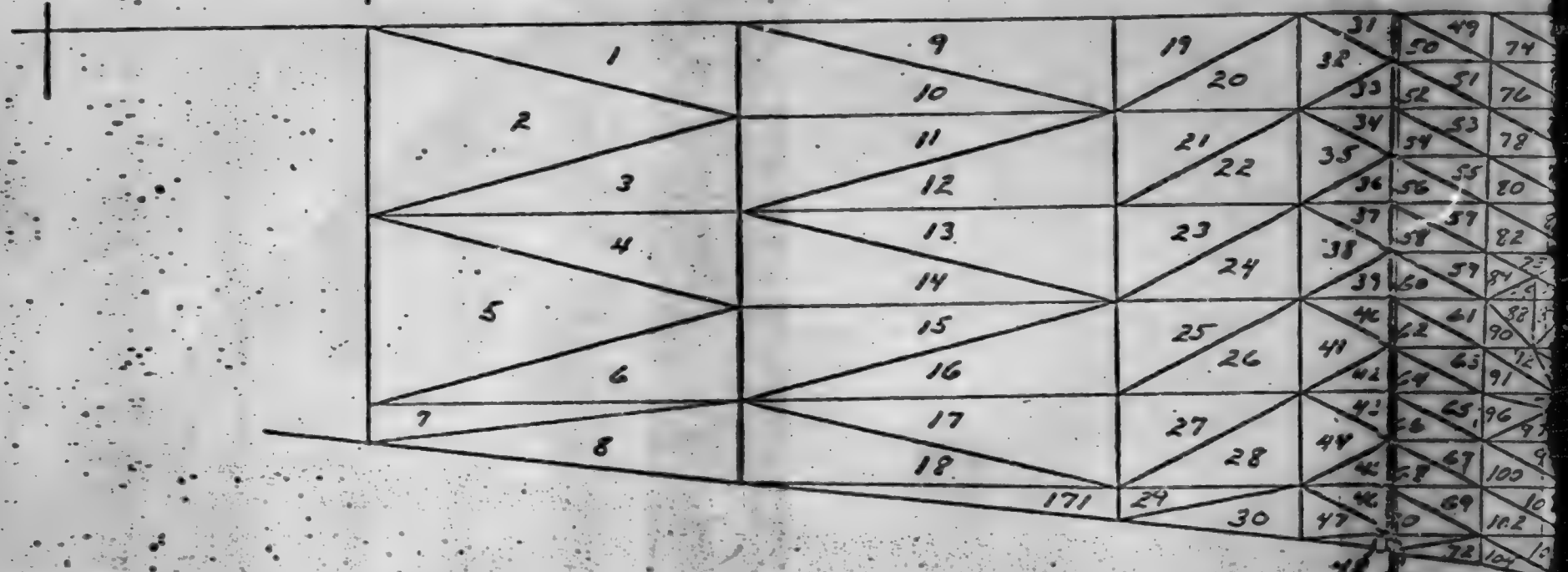
ale : $\frac{1}{2}$" = 1"

CALCULATIONS FOR

Fremont River Bridge (Failure)

SPP 3

3 3/8" ±



Butt Weld

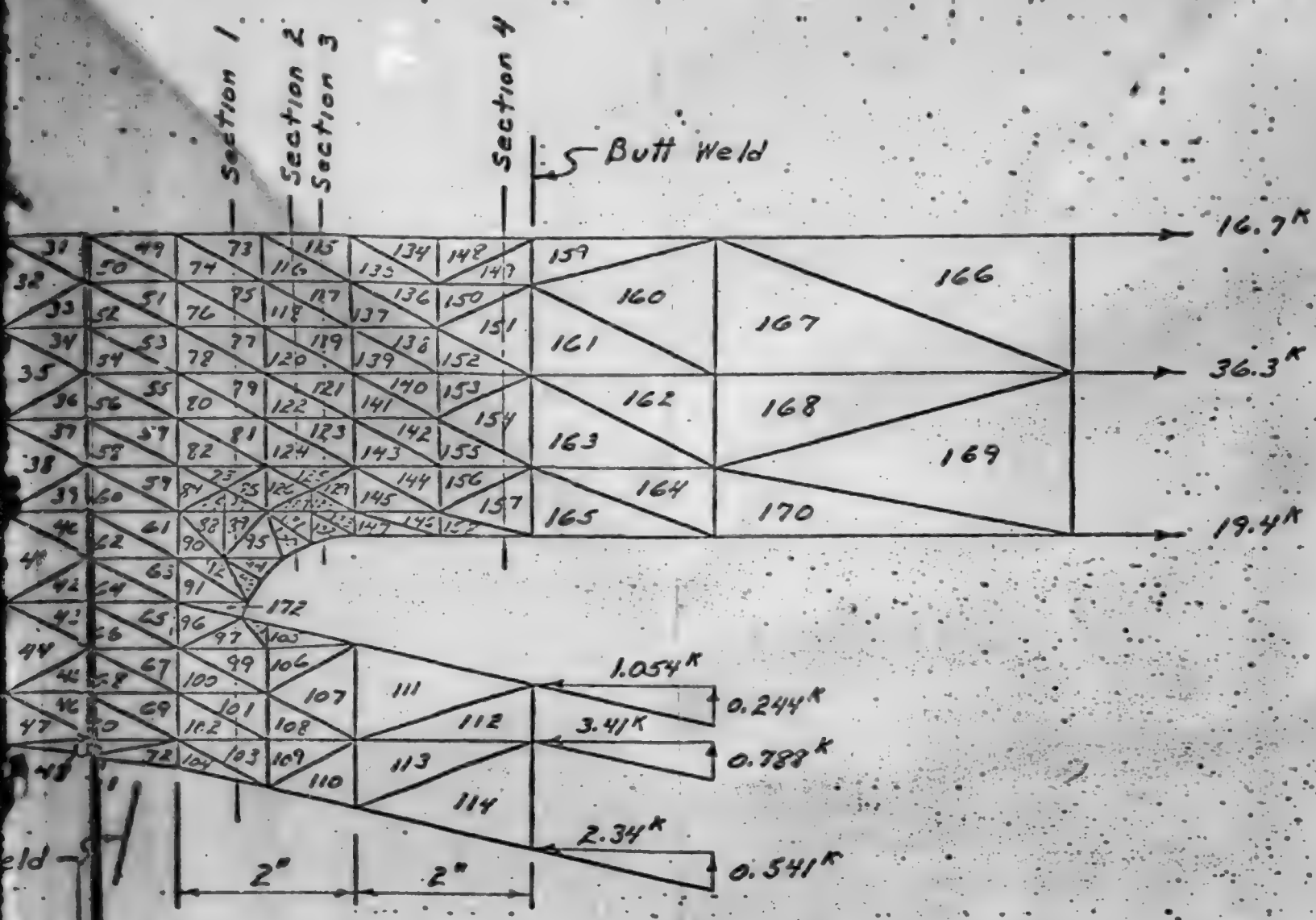
Element Numbers & Joint Loads

JOB NO. [illegible] SHEET NO. F-2

MADE BY J.O.E. DATE 12-10-71

CHECKED BY _____ DATE _____

BACK CHECKED BY _____ DATE _____



Joint Loads - Finite Element Run

Note:
For joint numbers and support conditions see sheet F-1.

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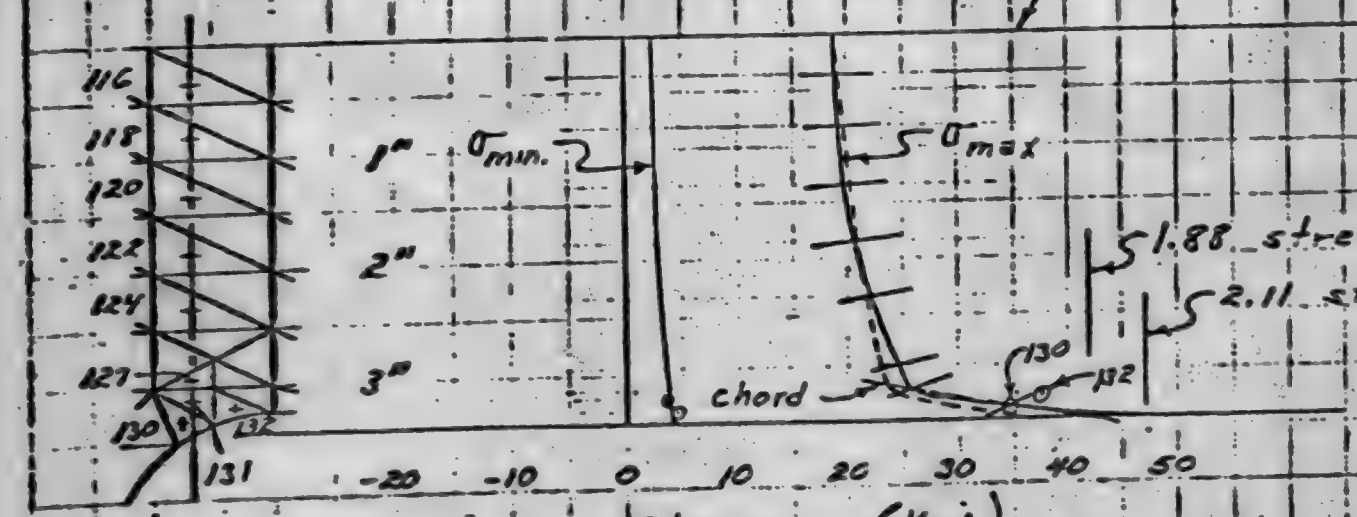
SHEET NO. F-3

CALCULATIONS FOR Fremont River Bridge (Failure)

Section 1

Section 2



FORM NO. 6.1103

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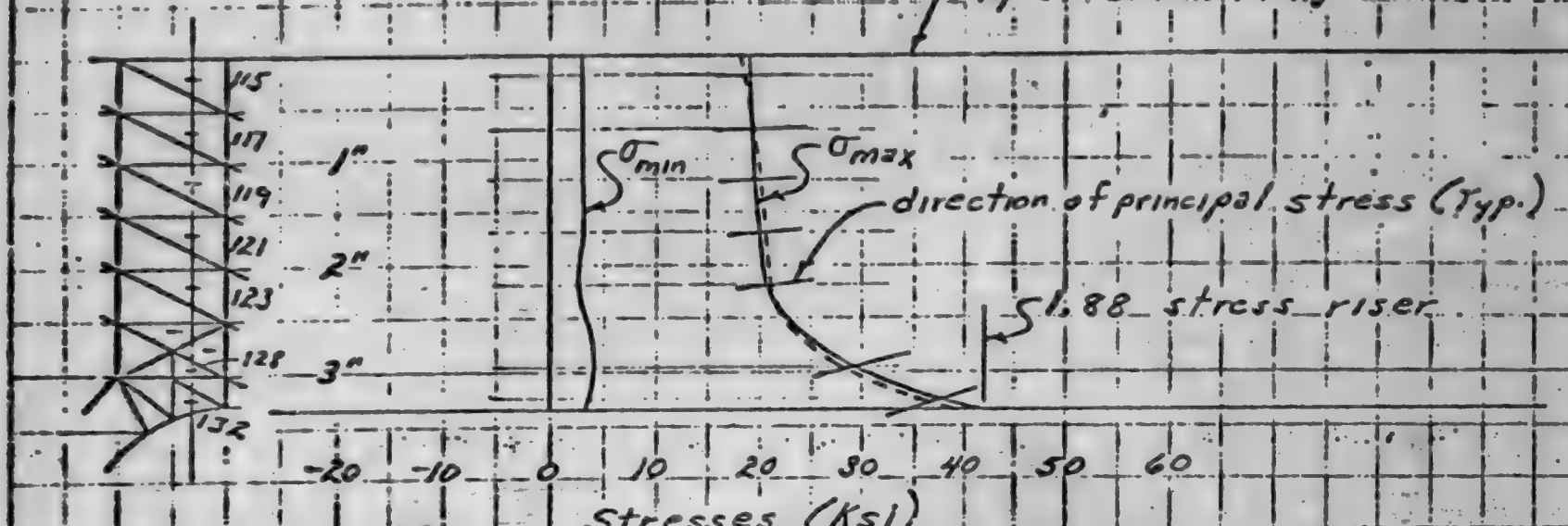
CONSULTING ENGINEERS

MADE BY J.O.E. DATE 12-9-71 JOB NO. 2907-11-06
CHECKED BY _____ DATE _____ SEC. NO. _____
SHEET NO. F-4

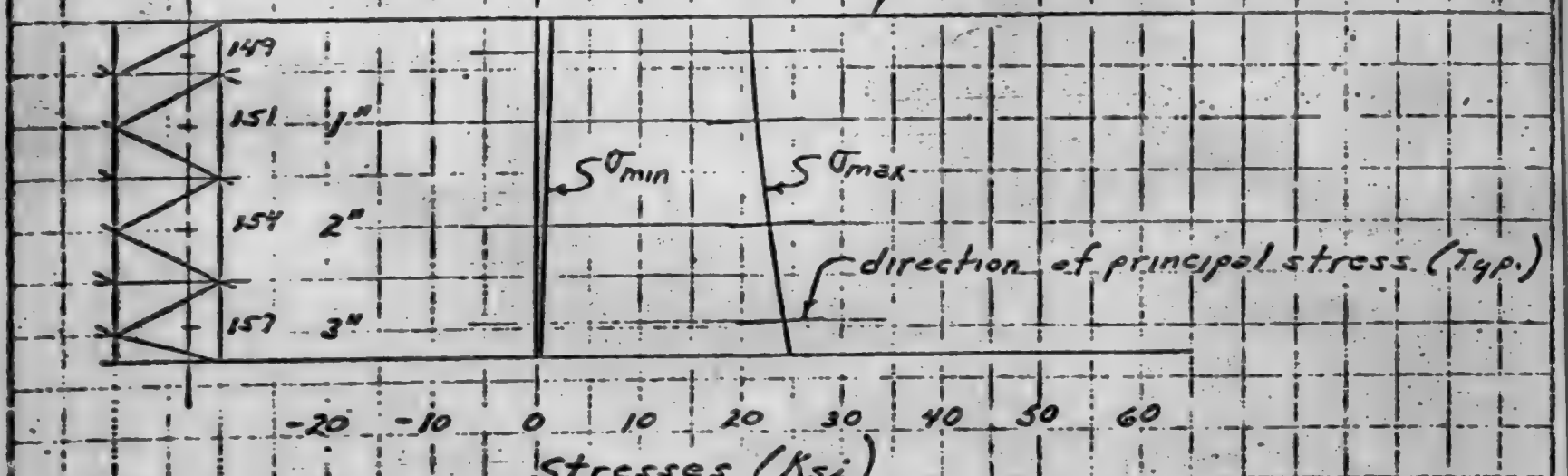
CALCULATIONS FOR

Fremont River Bridge (Failure)

Section 3

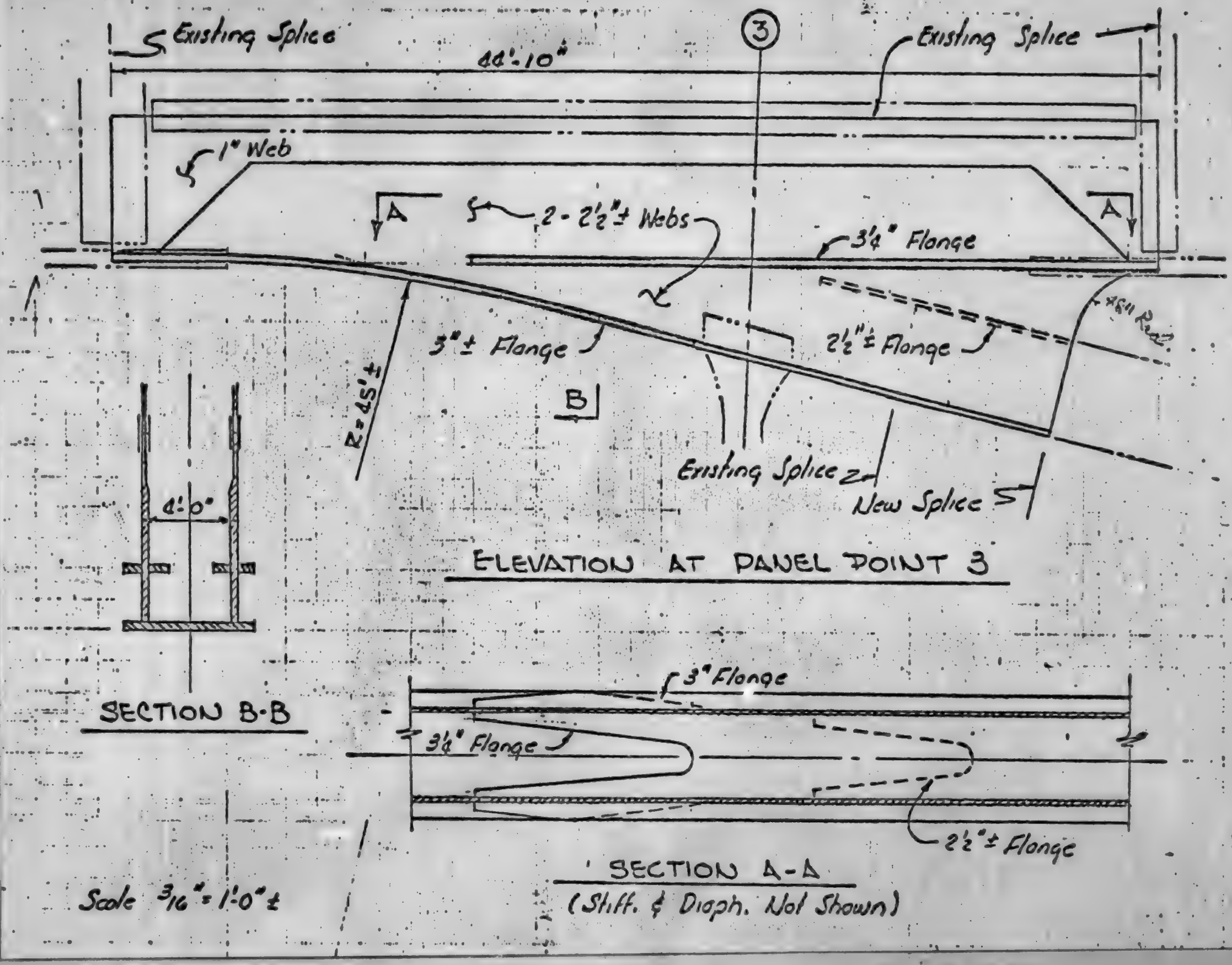


Section 4



FORM NO. 63102

FORM NO. 8-1162



ELEVATION AT PANEL POINT 3

SECTION B-B

SECTION A-A
(Stiff. & Diaph. Not Shown)

Scale 3/16" = 1'-0"±

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

CALCULATIONS FOR Fremont Bridge - Portland, Oregon

MADE BY KLL DATE 12-6-11 JOB NO. 6410.11-03
CHECKED BY DATE SEC. NO.
SHEET NO. S-1

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12-21-71 Gen. Files

Nov. 3'71

I-165-3(17)303
7276

From John Jenkins-
Charpy Impact tests on
A588 plate for machined
junction pieces on Fremont
Bridge

Heat # 71e 891
2 pcs. t = 6 1/4"
Test results @ 40°F
55, 68, 35
Heat # 69e 859
2 pcs. t = 6 1/4"
Test results at 40°F 50, 52, 62
4 pcs., t = 5 1/2"
Test results @ 40°F 80, 75, 90

All tests longitudinal tests

NOTED
A. E. JOHNSON

cy Miami
12-21-71

METALLURGICAL ENGINEERS, INC

ENGINEERING AND APPLIED SCIENCES

2340 S.W. CANYON ROAD
P.O. BOX 1048
PORTLAND, OREGON 97207
503/228-9663

working with MATERIALS ECOLOGY INDUSTRIAL PRODUCTS AND PROCESSES

W & H

State of Oregon
Department of Transportation
TO: Attention: Mr. Ivan Merchant
P. O. Box 13160
Portland, Oregon 97213

CLIENT NO.

REFERENCE NO. 706015 (705062)

DATE: 12-13-71

SUBJECT: INVESTIGATION OF IN-CONSTRUCTION CRACK IN GIRDER TRUSS JOINT AREA; FREMONT BRIDGE.

Memorandum Report 12-10-71
Weekly Work Report Summary.

from Harry Czyzewski, P.E.
Projects Director

1. We continued to sample the junction piece, and removed the coupon between the webs (this was removed in two pieces). Further, we obtained permission to remove the coupon directly below the web and did remove the one under the north web. It is our intention to remove that portion under the south web in the following week.

2. The coupons which had been removed were examined in our laboratory by L.F. Dobyns and William H. Osmus of American Bridge and Robert Kersten for Murphy-Pacific.

3. We expect to proceed with detailed fractography of the coupons simultaneous with selected metallographic and macrographic examinations of metallographic specimens. Simultaneously, we will be making the first set of Charpy V-notch specimens oriented in the principal axis, that is longitudinal and transverse, for test at ~~minus~~ 40°F.

4. We will also initiate chemical analyses to check the identification of the junction piece, with respect to its heat number.

5. We reviewed the files submitted to us, re the prior cracks and repair procedures, and conferred with R.O. Cunningham and J. Jenkins.

6. Our accountant, Harold Faunt, and I met with Mr. James Carpenter of the Highway Division to discuss the details of the invoicing and accounting procedures, as required under the contract.

H.C. called 12/8/71, changes incorp. Tests parallel Welding 15½, 24 and 16½ lbs

HC:hg
cc: 2
cc: Robert O. Cunningham

H.C.'d W.C.'d

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METROPOLITAN ENGINEER
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ME AME AME MQE MDE MTE

c/sol

METALLURGICAL ENGINEERS, INC
ENGINEERING AND APPLIED SCIENCES

2340 S.W. CANYON ROAD
P.O. BOX 1048
PORTLAND, OREGON 97207
503/228-9663

working with MATERIALS ECOLOGY INDUSTRIAL PRODUCTS AND PROCESSES

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Attention: Mr. Ivan Merchant
P. O. Box 13160
Portland, Oregon 97213

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REFERENCE NO. 705062

DATE: 12-10-71

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Memorandum Report 12-3-71;
Weekly Work Report Summary.

from Harry Czyzewski, P.E.
Projects Director

1. We obtained permission to sample the junction piece per Sketch No. 1, memorandum of November 24, 1971. We did proceed to remove coupons on the outboard (south) flange and the inboard (north) flange; and had machined half way through for the coupon to be taken between the webs.

2. We prepared the schedule of sampling and kept the Murphy-Pacific expert from Testing Engineers, Inc., Robert Kersten, notified of the progress so he could arrange his schedule of inspection. Machining will not proceed until after inspection by the Murphy-Pacific and the American Bridge experts.

3. We reviewed a specific draft of the contract documents and commented on it. Further, we asked for a conference with Federal Highway Administrative personnel, our own accountant, and the State Highway Division personnel who will be concerned with the contract documents, the invoices and the post-contract audits.

Harry C. notified 12/17/71 @ 9:00 AM that our tests and other inspections are provided for Per T.E. instructions.
DBrn
12/20/71

HC:hg

cc: 2

cc: Robert O. Cunningham

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OREGON STATE HIGHWAY DEPARTMENT

METROPOLITAN SECTION

5821 N.E. GLISAN • PORTLAND, OREGON • 97213 • Phone 235-8911

I-405-8(17)303
7276

December 20, 1971

Fremont Bridge Superstructure
Stadium Freeway
Contract No. 7276

Cribbing Under Portal at P.P. 0

Murphy Pacific Enterprises
Swan Island Kenton Station
Portland, Oregon 97217

Attention: E.D. Geer

Gentlemen:

You are aware of the deflected link at P.P. 0 of the subject project. The State views this as a hazardous condition under certain conditions of seismic and wind loading.

You are hereby directed to install cribbing uder the portal frame to pick up the load if the link should fail.

The cribbing is not to be wedged so as to restrict the thermal expansion but it is not to allow more than ¼ inch of movement of the portal downward before it comes in bearing. If you have further questions please contact this office.

Respectfully,

R.O. Cunningham
Resident Bridge Engineer

ROC:dgh

cc: Edwards
Merchant
Schroeder
Bill Choate (MPE)
file

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OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
TOM EDWARDS

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DEC 20 1971
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I-405-8(17)3C3
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
December 17, 1971

To: MEMO TO FILE

SUBJECT: Fremont Bridge
Contract #7276

On December 14, I met with the following people concerning the Fremont Bridge:

Donald W. Shupp	Surety Representative
Wayne S. Jensen	" "
Don Purcell	" "
Al Kostelic	" "
Donald Humm	1st Western Bank & Tel.

They stated unequivocally that they were providing the money as required by Murphy Pacific to complete the Fremont Bridge. They were in accord that no firm decision should be taken with respect to Panel Point 3 until such time as the cause of the existing failure has been determined.

They stressed that continued communications between the contractor, the bonding people, and the Division should be maintained.

I advised them that I did not intend to permit erection of steel at Panel Point 3 of the east back span until the cause of failure at Panel Point 3 west has been determined.

Tom

Tom Edwards
Deputy State Highway Engineer

TE:ms
cc A. E. Johnson
I. D. Merchant
R. L. Schroeder

cy R.O. Cunningham 6-2-72

12-15-71

FREMONT BRIDGE COMPLEX PROJECT INFORMATION

PROJECT	CONTRACT NO.	CONTRACTOR	DATE AWARDED	DATE COMPL.	LENGTH (LANE FT.)	QUANTITIES STRUCT. STEEL (LBS.)	QUANTITIES CONCRETE (CY)	QUANTITIES REINFORCE. (LBS.)	ENGINEERING CONSULTANT	EXPENDITURES CONTRACT AMOUNT	EXPENDITURES TOTAL* AMOUNT	EXPENDITURES AMOUNT FOR ENGINEER CONSULT.
Fremont Bridge Pier Const.	7124	Peter Kiewit Sons' Co.	2-27-68	5-13-70	N/A	520,000	38,000	1,950,000	Parsons, Brinkerhoff, Quade & Douglas	3,370,072	4,188,200	714,000
Fremont Bridge Superstructure	7276	Murphy-Pacific Enterprises	7-3-69	Est. 1973	17,300	17,450,000	3,910	1,010,000	"	21,833,293	24,054,902	Included in above
West Fremont Interchange	7214	Anderson-Hannan	4-29-69	Est. 1972	36,000	15,952,000	65,647	19,150,000	Howard, Needles, Tammen & Bergendoff	18,893,289	20,868,473	1,653,642
West Fremont Interchange (Unit 2)	7623	Drake-Willamette	8-26-71	Est. 1972	Included in above	126,200	11,270	3,885,300	"	3,270,487	3,715,410	Included in above
East Fremont Interchange, Unit "A"	7310	Drake-Willamette	9-11-69	Est. 1972	32,000	16,156,000	19,817	4,388,500	"	12,994,987	13,928,738	Included in above
East Fremont Interchange, Unit "B"	7311	Drake-Willamette	9-11-69	Est. 1972	Included in above	8,740,800	15,725	2,989,400	"	8,982,856	9,458,459	Included in above
East Fremont Interchange, Unit "C"	7312	Drake-Willamette	9-11-69	Est. 1972	Included in above	352,500	8,252	2,712,000	"	2,007,349	2,218,094	Included in above
TOTALS						59,297,500	162,621	36,085,200		71,352,333	78,432,276	2,367,642

TOTAL COST FREMONT BRIDGE COMPLEX $80,799,918

* Includes Additional Anticipated Items, Contingencies, and Construction Engineering

NOTED
TOM EDWARDS

1-24-71

ERECTION SEQUENCE OF WEST SIDE SPAN

FREMONT BRIDGE SUPERSTRUCTURE

STADIUM FREEWAY

CONTRACT NO. 7276

DECEMBER 14, 1971

#	
1	Erect North Bearing Assembly
2	Erect South Bearing Assembly
3	Block Assemblies in position
4	Erect South Upper Shoe Casting
5	Erect North Upper Shoe Casting
6	Begin erecting FW 1
7	Erect Arch Section 1A South
8	Erect Arch Section 1A North
9	Adjust Arch Work line Elevation
10	Erect Arch Strut at P.P. 9
11	Erect Arch Strut at P.P. 8
12	Erect Arch Lateral Bracing P.P. 8 to P.P. 10
13	Erect Arch Strut at P.P. 7
14	Erect Arch Lateral Bracing P.P. 7 to P.P.8
15	Erect Bottom horizontal Strut of Sway Frame at P.P. 10
16	Erect North Sway Frame Column to elevation 107.00'
17	Install North Temporary Adustable Strut
18	Erect South Sway Frame Column to elevation 107.00'
19	Install South Temporary Adjustable Strut
20	Erect Sway Frame diagonals to elevation 107.00'
21	Erect Upper Section of the North Sway Frame Column
22	Erect upper Section of the South Sway Frame Column
23	Erect remaining Sway Frame diagonal and norizontal Struts
24	Erect Column 9 South and Wind Chord between Column 8 and Sway Frame
25	Erect Column 8 South

#	
26	Erect South Longitudinal tie between P.P. 7 and P.P. 10
27	Erect Column 9 North and Wind Chord between Column 8 and Sway Frame
28	Erect Column 8 North
29	Erect North Longitudinal tie between P.P. 7 and P.P.10
30	Erect Lower Deck Floor beam at P.P. 8
31	Erect Lower Deck Floor beam at P.P. 9
32	Erect Column 7 North
33	Erect Column 7 South
34	Erect Lower Deck lateral bracing between P.P. 8 and P.P. 9
35	Erect North and South Wind Chord between P.P. 6 and P.P. 8
36	Erect lower deck floor beam at P.P. 7
37	Erect lower deck floor beam at P.P. 10
38	Erect lower deck lateral bracing between P.P. 7 and P.P. 8
39	Erect lower deck lateral bracing between P.P. 9 and P.P. 10
40	Erect stringers between P.P. 8 and P.P. 10
41	Erect Girder section 1G South
42	Erect Girder section 1G North
43	Release the tenporary Adjustable Strut
44	Install Pin at the top of Column 9 North
45	Install Pin at the top of Column 8 North
46	Install Pin at the top of Column 7 North
47	Install Pin at ths top of Column 7 South
48	Install Pin at the base of Column 7 North and South
49	Install Pin at the top of Column 9 South
50	Install Pin at the top of Column 8 South
51	Erect Stringers between P.P. 6½ and P.P. 8

#	
52	Erect Orthotropic Deck Section 1D
53	Adjust Jacks at FW 1
54	Erect Arch Section 2A North
55	Erect first half of Arch Section 2A South
56	Erect last half of Arch Section 2A South
57	Erect Orthotropic Deck Section 3D
58	Erect Lower deck floor beam at P.P. 4
59	Erect Arch Strut at P.P. 5
60	Erect Arch Strut at P.P. 6
61	Erect Arch Lateral Bracing between P.P. 5 and P.P. 7
62	Erect Orthotropic Deck Section 2D
63	Erect Column 6 North
64	Erect Column 5 North
65	Erect Column 4 North
66	Erect Column 6 South
67	Erect Column 5 South
68	Erect Column 4 South
69	Adjust Jacks at FW 1 and FW 2
70	Erect Girder Section 2G North
71	Adjust jacks at FW 1 and FW 2
72	Erect Girder Section 3G North
73	Adjust jacks at FW 1 and FW 2
74	Erect Girder Section 2G South
75	Install Pin at top of Column 6 South
76	Adjust jacks at FW 1 and FW 2
77	Erect Girder Section 3G South
78	Install Pin at top of Column 4 North
79	Adjust jacks at FW 1 and FW 2

#	
80	Drill and bolt the longitudinal deck splices in Orthotropic Deck Sections 1D and 2D.
81	Install pin at top of Column 4 South
82	Adjust at FW 1 and FW 2
83	Drill and bolt first half of longitudinal deck splice in Deck Section 3D
84	Adjust jacks at FW 1 and FW 2
85	Drill and bolt last half of longitudinal deck splice in Orthotropic Deck Section 3D
86	Erect Wind Chord between Column 5 and Column 6 North
87	Erect Wind Chord between Column 5 and Column 6 South
88	Erect lower deck floor beams at P.P. 5 and P.P. 6
89	Erect lower deck lateral bracing between P.P. 6 and P.P. 7
90	Erect lower deck lateral bracing between P.P. 4 and P.P. 6
91	Erect stringers between P.P. 5 and P.P. 6½
92	Erect stringers between P.P. 4 and P.P. 5
93	Erect Orthotropic Deck Section 4D
94	Erect Girder Section 5G North
95	Erect Girder Section 5G South
96	Place Wind Tongue at Pier 2W
97	Erect North Post of the Portal Frame
98	Erect South Post of the Portal Frame
99	Erect Arch lateral bracing between P.P. 0 and P.P. 11
100	Erect lower cross beam in Portal Frame
101	Adjust jacks at FW 1 and FW 2
102	Drill and bolt first half of longitudinal deck splice in Orthotropic Deck Section 4D
103	Erect upper cross beam of the Portal Frame
104	Erect Column 11 South
105	Adjust jacks at FW 1 and FW 2
106	Drill and bolt last half of longitudinal deck splice in Orthotropic Deck Section 4D

#	
107	Erect Column 11 North
108	Erect Wind Chord between P.P. 10 and P.P. 12
109	Erect Column 12 North and South
110	Erect lower deck floor beam at P.P. 11
111	Erect lower deck lateral bracing between P.P. 10 and P.P. 11
112	Erect Orthotropic Deck Section 6D
113	Erect Orthotropic Deck Section 5D
114	Erect Stringers P.P:10 to P.P. 11½
115	Install Girder Web stiffeners between P.P. 0 and P.P. 7
116	Adjust jacks at FW 1 and FW 2
117	Drill and Bolt longitudinal decks splice in Deck Section 5D
118	Drill and Bolt longitudinal decks splice in Deck Section 4D
119	Erect Orthotropic Deck Section 8D
120	Adjust jacks at FW 1 and FW 2
121	Erect Girder Section 4G South
122	Erect Girder Section 4G North
123	Apply Crane load to Girder Section 5G and Ajust jacks at FW 1 and FW 2
124	Drill and Bolt longitudinal deck splice in Deck Section 8D
125	Install pin at top of Column 5 South
126	Erect Arch Section 3A South
127	Install pin at top of Column 5 North
128	Connect Columns 11 and 12 South to Arch
129	Erect Arch Section 3A North
130	Connect Columns 11 and 12 North to Arch
131	Erect Arch Strut at P.P. 11
132	Erect Orthotropic Deck Section 7D
133	Erect Arch Strut at P.P. 12

134	Erect Arch Lateral bracing P.P. 11 and P.P. 12
135	Erect Girder Section 6G North
136	Erect Girder Section 6G South
137	Adjust jacks at FW 2
138	Apply crane load to free end of Girder Section 4G
139	Drill and bolt longitudinal deck splice in Deck Section 4G
140	Apply load to Girder Section 6G with Marine Boss and raise Arch Section 4A South into position
141	Apply load to Girder Section 6G with Marine Boss and raise Arch Section 4A North into position
142	Erect lower deck floor beam at P.P. 12
143	Erect Girder Section 7G South
144	Erect Girder Section 7G North
145	Erect Girder Section 8G North
146	Erect lower deck floor beam at P.P. 13
147	Erect Arch lateral bracing between P.P. 12 and P.P. 13
148	Erect lower deck lateral bracing between P.P. 12 and P.P. 13
149	Erect Wind Chord between P.P. 12 and P.P. 13
150	Connect Column 13 North to Arch
151	Erect Girder Section 8G South
152	Connect Column 13 South to Arch
153	Erect Stringers between P.P. 11 and P.P. 13
154	Erect Orthotropic Deck Section 9D
155	Erect lower deck hangers and floor beams at P.P. 1,P.P. 2 and P.P. 3
156	Erect Wind Chord between P.P. 0 and P.P. 2
157	Erect Orthotropic Deck Section 10D
158	Erect lower deck lateral bracing between P.P. 0 and P.P. 2

159	Erect Stringers between P.P. 0 and P.P. 2
160	Erect lower deck lateral bracing between P.P. 2 and P.P. 3
161	Erect Stringers between P.P. 2 and P.P. 3
162	Erect Orthotropic Deck Section 12D
163	Erect Orthotropic Deck Section 11D
164	Adjust jacks at FW 2
165	Drill and bolt the first half of the longitudinal deck splice in Deck Section 11D
166	Erect Orthotropic Deck Section 13D
167	Adjust jacks at FW 2
168	Drill and bolt the second half of the longitudinal deck splice in Deck Section 11D
169	Adjust jacks at FW 2
170	Drill and bolt the longitudinal deck splice in Deck Section 12D
171	Drill and bolt the longitudinal deck splice in Deck Section 13D
172	Adjusting the jacks at FW 2 before drilling the first 15' 6" of the longitudinal deck splice in Orthotropic Deck Section 9D when the Girder Section 4G South cracked.

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METALLURGICAL ENGINEERS, INC
ENGINEERING AND APPLIED SCIENCES

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P.O. BOX 1048
PORTLAND, OREGON 97207
503/228-9663

working with MATERIALS ECOLOGY INDUSTRIAL PRODUCTS AND PROCESSES

I-405-8(17)303
7276

CLIENT NO.

TO: State of Oregon
Department of Transportation
Attention: Mr. Ivan Merchant
P. O. Box 13160
Portland, Oregon 97213

REFERENCE NO. 706015 (705062)

DATE: 12-13-71

SUBJECT: INVESTIGATION OF IN-CONSTRUCTION CRACK IN GIRDER TRUSS JOINT AREA; FREMONT BRIDGE.

Memorandum Report 12-10-71
Weekly Work Report Summary.

from Harry Czyzewski, P.E.
Projects Director

NOTED
A. E. JOHNSON

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Resident Bridge Engineer

RECEIVED
DEC 16 1971
BRIDGE DIVISION

HC:hg
cc: 2
cc: Robert O. Cunningham

c/sol

METALLURGICAL ENGINEERS, INC
ENGINEERING AND APPLIED SCIENCES

2340 S.W. CANYON ROAD
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503/228-9663

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RECEIVED
DEC 15 1971
Resident Bridge Engineer

HCzhg

cc: 2

cc: Robert O. Cunningham

NOTED

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c/cc:

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MURPHY PACIFIC CORPORATION

4300 EASTSHORE HIGHWAY . EMERYVILLE . CALIFORNIA 94606

I-405-8(17)303
7276

December 3, 1971

RECEIVED
DEC 10 1971
Resident Bridge Engineer

State of Oregon
Department of Transportation
Highway Division
5821 N.E. Glisan
Portland, Oregon 97213

Attention: Mr. R.O. Conningham
Resident Engineer

CY Maine 12-15-71

Subject: Labor and equipment effected by Girder Failure of October 28, 1971 - through December 1, 1971

Gentlemen:

The following list reflects labor and equipment directly effected by the girder failure of October 28, 1971.

Equipment idled @ West Back-Span site:

1) 4100W Manitowoc Crawler Crane
1) 40' tool trailer
1) 20' office trailer
1) stairway tower
1) elevator tower
1) falsework tower
2) concrete footings
2) deck access scaffolds
apx. 19,000 sq. ft. Safety nets
misc. barricades and lights
1) Pettybone A-25, 12-ton Center mount Crane (until 11-16)
1) 400-amp. Lincoln Welding machine (until 11-12)
1) 5-cy Garbage bin (until 11-22)
misc. Oxygen & actylene bottles (until 12-2)
3) Toggle-bug portable drills (until 11-18)
1) Traveler scaffold (until 11-18)
1) Porta-toilet (until 11-22)
1) ½=toilet (until 11-18); 1) 600-cfm Air Comp. as of 11-19

NOTED
A. E. JOHNSON

Labor idled:

81 working-men on job 10-28-71

8 Ironworkers laid off 10-29 Reduction in force
4 Pilebutts " " " " " " "

TELEPHONE (415) 654-1717
CABLE ADDRESS "MYPAC"

NOTED
TOM EDWARDS

MAILING ADDRESS
POST OFFICE BOX 23007
OAKLAND, CALIFORNIA 94623

MURPHY PACIFIC CORPORATION
4300 EASTSHORE HIGHWAY . EMERYVILLE . CALIFORNIA 94608

1 Ironworker laid off 11-8 Reduction in force

5 Ironworkers laid off 11-9 " " "

2 Ironworkers laid off 11-12 " " "

4 Ironworkers laid off 11-19 " " "
1 Laborer " " " " " " "
1 Pilebutt " " " " " " "
1 Operator " " " " " " "

3 Operators laid off 11-22 " " "

7 Ironworkers Quit during period of 10-28, to 12-1-71
1 Operator " " " " " " " " " " "

5 New hires (all @ Swan Island) 2-boatmen & 3-operators

2 Re-hires; 1-pilebutt (for extra-work @ PP 3), & 1-operator

50 Work-men on job as of December 1, 1971

Equipment idled @ East Back-Span Site:

1) 4100 W Crawler Crane (as of 11-23-71)

Very truly yours,

Theodore D. Fox

cc: Tom Edwards X
I.D. Merchant
R.L. Schroeder
[redacted]

TELEPHONE (415) 653-1717
CABLE ADDRESS "MYPAC"

MAILING ADDRESS
POST OFFICE BOX 23007
OAKLAND, CALIFORNIA 94623

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OREGON STATE HIGHWAY DIVISION

HIGHWAY BUILDING • SALEM, OREGON • 97310

December 3, 1971

I-405-9(12)303
7876

Metallurgical Engineers, Inc.
P. O. Box 1048
Portland, Oregon 97207

NOTED
A.E. JOHNSON

Attention Mr. Harry Czyzewski, P.E.
Projects Director

Gentlemen:

Fremont Bridge

Please refer to your memorandum report 11-24-71, covering proposed sampling and trepanning of the south girder of the Fremont Bridge. This memorandum included Sketch Number 1 - field sampling and trepanning procedure proposed by MEI for first coupons and Sketch Number 2 - ultimate coupons proposed for completion of planned evaluation and report.

The prime purpose of your investigation is to determine the metallurgical and mechanical fracture properties of the machined junction piece. The field samples illustrated in your Sketch Number 1 are satisfactory. Also a field sample of the same cross section and with a length transverse to the girder centerline of approximately 41 inches can be removed. These samples must be limited to the vertical planes discussed with you on November 18 in Mr. Cunningham's office. These vertical planes being 1/8 inch minimum landward from the full penetration butt weld joining the junction piece to the 3 1/4 inch tie girder flange and a vertical plane 1/2 inch minimum from the intersection of the 1 5/8 inch radius and the top plane of the top arch rib flange. Also as discussed, there is to be no heat used in the removal of these specimens. I am sure you are aware of the necessity of maintaining the structural integrity of the structure as it now rests on the various piers and falsework supports.

At this time a repair procedure has not been proposed by the contractor. Until the girder section encompassing the fractured machined junction piece is physically removed from the structure, it will not be possible to obtain samples other than the three noted

cy mailed 12-3-71

above. If and when the girder section is removed from the structure and the machined junction piece removed from the girder section, additional material will be made available to you for further testing. However, at this stage it must be understood that under no circumstances will any material be removed from the top flange of the arch rib itself or from the tie girder flange riverward from the full penetration butt weld joining the flange to the machined junction piece.

It is desired by the State that you expedite your work utilizing the three samples mentioned above so that an interim report of your findings may be submitted.

Very truly yours,

R. L. Porter
State Highway Engineer
By

Ivan D. Merchant
Bridge Engineer

IDM:dh

cc W. J. Hart
R. L. Schroeder
R. O. Cunningham
A. E. Johnson

RECEIVED
DEC 3 1971
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
DEC 2 - 1971
FOR FILING

I-405-8(12)303
7276

December 1, 1971

Murphy Pacific Enterprises
Post Office Box 23007
Oakland, CA 94623

Gentlemen:

Re: Contract 7276
Fremont Bridge

After hearing your presentation requesting a time extension on your Fremont Bridge contract, the Claims Review Board asked the Bridge Section to submit a statement of their total recommendation in time-days.

The Bridge Section made the recommendation in two categories---one having to do with strikes, etc.; the other with the difficulty in producing the bearing assemblies.

Upon receipt of this information, the Board elected to immediately process an extension in the amount of 162 days which will cover the strikes, refusal of steel workers to go into the air due to weather conditions; interference by Harbor Drive traffic, and the other items.

The Board also directed Legal Counsel to prepare a recommendation concerning the delay encountered because of the difficulty in casting the bearing assemblies. This will be handled as quickly as the legal opinion is available.

Very truly yours,

R. L. Porter
State Highway Engineer

By

Tom Edwards
Deputy State Highway Engineer

TE:vs
cc Jack Gear
bc R. L. Porter
A. E. Johnson
F. B. Klahoe
L. I. Lindas
V. E. Skoog
John Bond
I. D. Merchant
C. G. Swenson
R. L. Schroeder
R. O. Cunningham

RECEIVED
DEC 2 - 1971
FOR FILING

I-405-8(17)303
7276

December 1, 1971

Mr. John Peterron
Associate Professor of
Civil Engineering
Department of Civil Engineering
Oregon State University
Corvallis, Oregon 97331

Dear Sir:

A copy of your November 16 letter to Ivan Merchant has been forwarded to me and was received with much interest.

We are proceeding with arrangements to install strain gauges on the Fremont Bridge, particularly on the east side where erection is in progress. We have requested our design consultant to recommend a pattern of installation in order that we may obtain the maximum amount of information on this particular structure. The Highway Division has worked with strain gauges in the past and we propose to install these either with our own or by the contractor's forces.

I will be happy to advise you when we are in the process of installation of the gauges, since I feel that you do have an interest in this procedure.

Very truly yours,

R. L. Porter
State Highway Engineer

By

A. E. Johnson
Assistant State Highway Engineer

AEJ:ja

bc R. L. Porter (enc.)
Tom Edwards "
Ivan Merchant - Please pursue this so that these gauges are installed as soon as possible.

OSU

OREGON STATE UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING

CORVALLIS, OREGON 97331

November 16, 1971

Mr. Ivan Merchant
Oregon State Highway Department
State Highway Bldg.
Salem, Oregon 97301

Dear Mr. Merchant:

At a recent meeting of the Structural Engineers Association of Oregon, Don Cunningham gave us a tour of the Fremont Bridge. The tour and his talk after dinner were both excellent. In the course of the talk I was amazed to learn that erection stresses were being determined analytically with no physical measurements to support the analytical results.

Modern analytical procedures may justify confidence in these results, but the fact is that this analysis must rely on field measurements. For example, a certain member may be too long and the structure or member must be deformed in order to make the connection. The amount of mis-fit is the critical parameter for analysis and must be established by field measurement. Perhaps this example does not pertain to the bridge construction, but I can't conceive of all parts fitting exactly.

I would like to propose that physical measurements of strain be taken at a few critical points for the remainder of the erection procedure. One technique for conducting this study would be through use of the Prewitt Scratch Strain Gage. These gages are available in lengths from 3" to 48" and cost about $200 each. Their strain sensitivity depends on length and are about .00133 to .000083 inches per inch in the lengths available. These strains translate into stresses of 40 k/in^2 and 2.5 k/in^2. It would appear that only the 48" gage would give adequate sensitivity. The advantage of the scratch gage is that it produces a permanent record of strains as they occur, and require no monitoring.

A second technique would employ weldable electrical resistance strain gages. They are attached to the structure with spot welds. They are rugged units and are inherently waterproof. Of course, they would require monitoring at critical times. There are techniques that allow reliable intermittent monitoring of strain gages.

I make this proposal first of all, as a Professional Engineer concerned with the advancement of knowledge. What an opportunity we have in the construction of the Fremont Bridge to make physical observations of erection stresses!

2 copies for file.

RECEIVED
NOV 17 1971
BRIDGE DIVISION

Secondly, I am in a position to do the study if it could receive some support by your (or some other) agency.

Although the proposal is in no way related to the structural failure, surely the importance of such a study is amplified by the falilure. I sincerely hope that the proposal will receive positive consideration.

Very truly yours,

John Peterson

John Peterson
Associate Professor of Civil Engineering

JP:jc
cc: M. E. Northcraft

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NOV 17 1971
BRIDGE DIVISION

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DEC 3 - 1971
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Gen. Files Copy

OREGON STATE HIGHWAY DIVISION

I-405-2(17)3
7276

Metropolitan Section 5821 N. E. Glisan Portland, Oregon

December 1, 1971

Pittsburgh Testing Laboratory
611 S. E. Harrison
Portland, Oregon

Attention: Mr. Don Scott

NOTED
A. E. JOHNSON

BOTTOM FLANGES OF GIRDERS 205 G1
FREMONT BRIDGE SUPERSTRUCTURE

You are aware of the crack in the flange of girder 205 G1L on the Fremont Bridge. We wish to obtain all information which may be available in your organization concerning the fabrication of the plates in question. Listed below you will find several questions which we would like to have answered regarding these plates. Any other pertinent information connected with the fabrication of the lower flange of girder sections 205 G1L and 205 G1R would be helpful.

1. It is our understanding that plates pn, pm, pk, ph, pg of girders 205 G1L and R were all welded together at about the same time. Was plate ph of 205 G1L welded to pg before the right angle re-entrant corner was machined out?

2. Were any tests conducted on plate ph of 205 G1L after removal of the right angle to determine if small cracks existed in the same area where 205 G1R plate ph cracked?

3. Could the method of picking up the plates and transferring them to the heat treating plant have put extreme bending moments in plate ph?

Please give as near as possible the fabrication sequence of girder sections 205 G1L and G1R and the dates of each operation if it is available.

R. L. Schroeder
Metropolitan Engineer

by

ORIGINAL SIGNED BY EDWARD L. HARDT

Edward L. Hardt
Assistant Metropolitan Engineer

RECEIVED
DEC 2 1971
OFFICE OF
STATE HIGHWAY ENGINEER

cc: Robert Cunningham
Tom Edwards
Al Johnson - Ivan Merchant

RECEIVED
DEC 1 - 1971
FOR FILING

I-405-3(17)303
7276

FREMONT BRIDGE - FIXED SHOES

Discussion
Production of Castings

The Fremont Bridge Superstructure Project Specifications allow 860 calendar days for the completion of construction. Before this specific number of days was established by the Oregon State Highway Division, certain time period relationships had to be allocated:

1. The time period for top fixed shoe castings to be manufactured and the time period required to reach that point of fabrication before fitting the first arch member to the top casting in shop pre-assembly.

2. The time period for the bottom casting to be manufactured and the time period required to reach that point in fabrication of sufficient quantity of members to warrant the beginning of erection.

On June 17, 1969 the State of Oregon wrote Revision Letter No. 3 of the Specifications outlining very stringent requirements as to the quality of the fixed shoe castings; namely, radiographic inspection. This was received just six days prior to the bid date of June 26, 1969, leaving the Bidder only three working days to transmit this information for re-bid.

When this Specification change was issued, no time extension for completion was allowed even though later events revealed that this change resulted in very serious schedule planning problems. Considerable time was required for the extra handling, x-raying and up-grade welding to produce castings of this x-ray quality over and above the so-called "bridge quality" casting. In addition, a good deal of time was required to search out a casting source capable and willing to quote on such quality. Having gone through this investigation of casting sources, it is obvious that there is not a foundry available which could have furnished castings early enough to complete the project within the alloted time. Assuming that all other components were fabricated as scheduled, they could not be fitted or erected as planned because the critical items, castings, would not be ready.

If the Specifications had not been amended to include radiographic inspection and the castings remained as "bridge quality" castings, there are approximately ten foundries in the United States and Canada that would have been capable of producing them for sale. (Other foundries

NOTED
TOM EDWARDS

exist that are capable, but their products are for their own use, not for sale.) One pre-bid quotation for "bridge quality" castings was received from Bethlehem Steel (See Attachment No. 1). Their delivery of the eight shoes varied from 140 to 385 days, completely machined. Assuming that no extensive casting supplier search had been necessary, such an order could have been placed in a reasonable length of time after the notice to proceed had been given and the details prepared, i.e., approximately September 15, 1969. Castings could have been completed by October of 1970.

To improve delivery, consideration was given to dividing the casting order into two separate orders; one for the top castings and one for the bottom castings. This idea was discarded when the design criticism and resulting lack of bids to cast the top casting at all was encountered. (See letter from Pittron, of 9/30/69, Attachment No. 2 and letter from Hawker Siddeley Canada Ltd., of 10/27/69, Attachment No. 3.)

This writer, on approximately August 15, 1969, was assigned the task of searching for foundries that would produce x-ray quality castings weighing in excess of 50 tons. Because of the difficulty and time involved in checking out every possible source, it was not until December 1, 1969, that an order could be written. (See Attachment No. 4 for summaries of this search, with comments.) Most of the search data was obtained through the Steel Founder's Society of America. No foundry would make a proposal on the castings as specified in Revision Letter No. 3. Only after two and one half months of search, and correspondence attempting to amend the Specifications, were we able to award National Forge Company of Erie, Pennsylvania a contract. Their proposal was the only one close to the requirements stated in Revision Letter No. 3 and the only proposal received that included the top fixed shoe. We had no choice but to place the order with National Forge.

The order was placed contingent upon approval of reduced x-ray severity levels. We were continually reminded by the State of Oregon that we were held bound by Specifications to meet the quality outlined in Revision Letter No. 3, the criterion upon which no foundry would base their proposal.

The order was placed for non-machined castings only because National Forge's machining schedule was so poor that castings would not have been delivered for from 259 to 371 days. To improve delivery, we were forced to search out a separate machining source for the castings. We were fortunate to discover that Bethlehem Shipyard in San Francisco had the capability and an open schedule at the time National Forge was to complete the castings. In order to maintain an optimum schedule for meeting the archrib fit-up requirements, it was necessary to have Bethlehem base their quotation on a 20-hour, six-day work week. This two phase order proposed the problem of additional weld repairs after machining, which meant additional welding qualification expense.

With this combination of orders we were able to reduce the overall delivery schedule to, from 161 days to 252 days, measured from a purchase date of December 1, 1969. This was the best schedule possible, resulting from all our investigations, even though our production schedule at that time indicated that we required castings earlier for archrib fit-up.

National Forge proceeded with the order without any difficulties until March 10, 1970. It was then discovered that the first top casting had a core shift during pouring and the resulting wall thickness would be too thin after machining. This was the first of eight failures - three core shifts and five cracked castings, which are discussed in greater detail following. These failures took place over a period of two and one half months during which corrective measures had to be taken, some of which involved design approval and resulted in further delays.

Top Casting Core Shifting

Of the four top castings three were rejected because of core shifting. The fourth one was borderline, but was accepted under an approved waiver. Core shifting could not be detected until after the pouring of the fourth casting as all four had to be scheduled for pouring within a given time period to meet delivery requirements. This time period was shorter than that period which must pass before the first casting would be checked dimensionally.

The top castings were poured on their sides which meant that cores, the shape of interior voids, had to be held submerged in position by steel inserts called chaplets. These chaplets hold the cores from floating upward in the molten metal. Because of the excessive force applied to the cores, the chaplets proved inadequate and a slight movement caused the rejection of these dimensionally. Since this conventional manner of holding the cores in place proved unworkable, National Forge proposed a procedure that affected the design of the casting. After the presentation of this procedure to the Project Engineers, Parsons, Brinckerhoff, Quade and Douglas (PBQ&D), approval was granted for its use. It consisted of two six-inch diameter steel inserts in the middle wall and two six-inch diameter cored holes in the upper wall which was later filled with welded cast plugs. (See National Forge letter of 3/17/70, Attachment No. 5 with Sketches, Attachments No. 6 and No. 7.)

Cracked Castings

Five castings were rejected as a result of cracking. First, three bottom castings of the original four poured and, later, two of the recast top castings, which were poured to replace two of the core shift rejections, cracked.

National Forge reported that these cracks were caused for different reasons. The major reason for the bottom casting cracking was the introduction of unequal stress build-up due to the thickening of the stiffner under the hub. Their letter of October 19, 1971 (See Attachment No. 8) states:

> Because of the x-ray requirements that were required on the split cylinder section of the Bottom Shoe Castings, it was necessary to have the center 6 inch thick plate redesigned. In looking back into possible causes for the failure of the three Bottom Shoes, the need for this redesign could be considered one of the possible contributing factors. The heavy mass of the redesigned rib dictated a riser size above normal. Even this large riser proved to be insufficient and can be considered a possible contributing factor to the casting failure.

Had there not been any x-ray requirements on this area of the casting, normal foundry practice would have been to chill this heavy section of the casting without having to modify the original 6 inch thick center plate. (See Attachment No. 9, Sketch of Bottom Shoe in Pouring Position.)

Chills are compatible steel inserts that are placed in the molds or cores at specific locations to purposely allow thicker sections to cool more rapidly than thinner ones and, thus, minimize internal defects during contraction by creating a uniform cooling. It also minimizes residual stresses.

With regard to the top casting cracking, National Forge reports that because of the bottom casting trouble they modified the initial heat treatment of the top castings by charging them in the furnace hot, with most of the cores intact and risers attached. Normal procedure is to charge them relatively cool and initially cleaned.

This hopefully beneficial treatment resulted in an unequal cooling effect upon removal due to the presence of core sand in the void areas which retained heat while allowing outer surfaces to cool. The resultant unequal residual stress build-up is believed to be the ultimate cause of cracking.

On recasting both the top and bottom castings that cracked, various changes which deviated from normal foundry practice for the particular specification were initiated; namely, pour sequence, degassing, riser design, molding practice, heat treatment procedures and chemistry. These procedures proved to be successful.

Five of the original castings which were formulated with Chemistry No. 1 did not crack.

Chemistry

The Specifications of the Contract called for a modified casting steel ASTM A-148, Grade 80-55. This deviated from the standard grades by locating the yield point of 55,000 psi between two standard grades of 80-55 and 90-60. (Bethlehem Steel quoted on Grade 90-60 because known chemistries have been established as reliable for each grade.) National Forge questioned PBQ&D about this deviation at an early meeting and they claim they specified 55,000 psi to insure that the supplier would attain the 50,000 psi minimum. (PBQ&D failed to state any deviations in ductility, so it was not clear what ductility should be attained. This became an issue when the ductility of one particular casting fell below the values for Grade 80-50.) The Foundry would be bound to meet the 50,000 psi minimum by Grade 80-50. In fact, normal foundry practice is to exceed the minimums by 10% to 40%.

Chemistry No. 1 (See Attachment No. 10, Chemistries Table) was selected to meet the Grade 80-55 since it had been successfully employed on many previous orders. Had there not been any cracking, the chemistry would not have been changed.

ASTM-148 specifies only the maximum percentages for sulfur and phosphorus. The balance of the chemical ingredients are determined by the foundry. National Forge selected a carbon range of .45% to .50% for the initial formulation along with other chemicals as shown in Table No. 1.

This Chemistry No. 1 was used in the pouring of all eight original castings. During March of 1970 the core shift of three top castings was discovered. Chemistry No. 1 was used on the recasting of these three, namely 005, 006 and 007. Because Bottom 002, 003 and 004 cracked in April of 1970, Chemistry No. 2 was formulated to help avoid cracking of recasting 005, 006 and 007 which were to replace the cracked rejections.

Bottom 005 was poured on May 8, 1970 with Chemistry No. 2. On May 11 Top Casting 006 cracked and Top Casting 005 cracked on May 16 after the pouring of Bottom 005.

Chemistry No. 3 was then formulated because of the cracking of upper castings. It was utilized on pouring the balance of the castings. It was selected to improve the toughness of Chemistry No. 2 and further reduce the tensile and yield strength.

Table No. 2 shows the relationship of chemistries and the resulting physicals for the eight final castings (See Attachment No. 11).

For a visual presentation of the foregoing, refer to bar schedule, Time Record of Rejections (Attachment No. 12).

With regard to our promised delivery dates, upon which our fabrication and erection schedule depended, the first top casting was delivered 240 days late and the first bottom casting was 270 days late as a result of these rejections and up-grading repairs. In comparison with a non x-ray casting schedule, the second west top casting was 327 days late and the second west bottom casting was 284 days late. On the east side the second top and bottom castings were 357 and 304 days late, respectively.

All of the foundries contacted for quotations were critical of the design of the top shoe casting:

1. Because of its configuration, the top casting was not really adaptable to the casting process and the deep recesses preclude any thorough cleaning of the core sand.

2. The inside of the walls called for spotfacing for the bolt holes. As one foundry stated, they could not clean the internal expanse sufficiently to allow spotfacing. As it turned out, Murphy Pacific has experienced considerable added expense to accomplish this spotfacing due to tool breakage. Tapped holes could have eliminated this problem with considerable cost savings. (See Sketch Attachment No. 13.)

3. Another foundry, in replying that they would not quote on the top shoe casting, stated that because of the wide expanse of the plates, or walls, of this piece, it would be nearly impossible to feed with metal.

National Forge Company accepted the order, including the top shoe casting. They were very aware of the difficulties in casting and their pricing reflected this. They accepted the order knowing it was a difficult one and had extra protection in their quotation, but not enough to cover the unexpected rate of loss.

On any new configuration casting, there is an element of risk of rejection because of the behavior of contraction. Only actual trial and error production of a casting will show precisely how the metal will behave. Or, as National Forge states in their letter of October 19, 1971 (Attachment No. 9):

> Whenever multiple quantities of large castings are required of a new design configuration, the producing foundry would normally desire the opportunity to make sample castings for evaluation before pouring subsequent pieces. We were not afforded this opprotunity in this case because of the tight

delivery requirements. This led to multiple loss of these castings since we were unable to make corrections to subsequent pieces before they had to be cast prior to the problems becoming known on the first piece poured.

National Forge Company is the new owner of the former Erie Forge and Steel Company, one of the largest foundries in the Unites States. One of their past bridge casting projects was the casting order for the rope saddles on the towers of the Verazzano Bridge in New York City. Pittsburg Testing Laboratory of Buffalo, New York can comment on the competency of National Forge Company as their inspectors are almost full-time observers of that foundry's operation for various clients. Their weekly reports to the State of Oregon Highway Division on this project can also attest to National Forge's diligence toward honoring their commitment after so many losses. An illustrated brochure (Attachment No. 14) is enclosed.

Preliminary planning in the design stage of this project should have included a more thorough investigation of the problems of casting a configuration such as the top fixed shoe. We believe the engineers, in specifying the inspection requirements of Revision Letter No. 3, would not have outlined the severity levels as they did if a feasibility inquiry had been made with any one foundry.

Bethlehem Steel Corporation

COLBY HOWE
Manager of Sales
J. A. PERKO
Assistant Manager of Sales
M. R. LUTGE
Contracting Manager

DISTRICT SALES OFFICE: 100 CALIFORNIA STREET
MAIL: BOX 3494
SAN FRANCISCO, CALIF. 94119

PHONE: 981-7120
AREA CODE 415

June 19, 1969

Murphy Pacific Corporation
4300 Eastshore Highway
Emeryville, CA

Attention: Mr. Harold Vogel

Gentlemen:

Subject: Oregon State Highway
Bridge No. 2529

Regarding our telephone conversation of this date on the above subject, we are pleased to quote as follows:

We propose to furnish the castings as listed herein, made of a cast alloy steel in conformity with ASTM Specification A-148, Grade 90-60, for Item Nos. 1 and 2 and ASTM Specification A-27, Grade 65-35, for Item No. 3, supplied in the "as cast" condition for the following per pound prices.

We also list below our additional prices to furnish the necessary suitable pattern equipment required for manufacture of these castings along with our additional prices to finish machine in conformity with the drawings listed.

Item No.	Qty.	Description	Drawing No.	Est. Rough Wt. Each	Est. Fin. Wt. Each	Price Per lb.	Pattern Price	Mach. Price Each
1	4 pcs.	Top shoes	25267	84,400#	76,500#	32.80¢	$5,430.00	$ 7,500.00
2	4 pcs.	Bottom shoes	25267	100,000#	89,400#	31.10¢	8,090.00	14,025.00
3	38	Suspender guides	25253	397#	350#	36.10¢	250.00	410.00

Item 1 and 2 above are quoted f.o.b. cars, Bethlehem, Pennsylvania and Item No. 3 above quoted f.o.b. cars, Steelton, Pennsylvania.

We can deliver Item 1 and 2 above beginning with one piece in 19 to 21 weeks after receipt of an order and full information at our plant and complete at the rate of one piece every 5 weeks thereafter.

Attachment No. 1

Bethlehem Steel Corporation

Item No. 3 can be delivered complete in 27 weeks after receipt of an order and full information at our plant.

The prices above include magnaflux testing in the fillet areas of the Items 1 and 2 only.

This quotation is subject to Terms and Conditions of Sale, BSC Com. 1a (Rev.E 12-65), attached.

Very truly yours,

BETHLEHEM STEEL CORPORATION
Colby Howe, Manager of Sales

BY: D. G. Olson

DOlson:lb
attachment

Pittron
a extron company
Pittsburgh Rolling Mills
Pittsburgh Steel Castings
Amsler Morton Industrial Furnaces
Amsler Morton, Canada

September 30, 1969

Mr. William R. Rielly
Engineer
Murphy Pacific Corporation
4300 Eastshore Highway
Emeryville, California

Re: Your Letter of 9/26/69
Our Phone Call - 9/30/69
Fixed Shoe Castings - Fremont Bridge

Dear Mr. Rielly:

This letter will confirm our telephone conversation this date. As explained to you, we feel that the top portion of this part is not really adaptable to the casting process. The deep recesses shown on the drawings submitted preclude any thorough cleaning of the cavities involved. Also, it would be nearly impossible to feed the wide expanse of "plate" which is shown on the drawing.

We would also not be in position to machine this part which calls for spot facing on the internal surface. Again, as explained, we could not sufficiently clean out this expanse to allow these areas to be spot faced.

We would not have the facility to machine the top portion in accordance with Note "A" on the drawing. Again, we feel that if you had this fabricated you could obtain a full bearing surface without difficulty.

Regarding the bottom casting, we are in position to supply this per requirements except for machining the deep recess as shown in Figure "CC" where the upper shoe slides into the lower shoe.

To give you an estimate on the price we would expect that the bottom shoe cast to meet your specifications would be priced as follows:

Attachment No. 2

Base Price:	32.00¢ per lb.
Magnetic Particle Inspection:	4.00¢ per lb. additional
X-ray, using a 24 MEV Betatron:	$1,800 each casting, with a maximum of 24 shots per casting.

We hope you understand this is not a firm quotation since the drawings are not sufficient to quote patterns or firm prices and that we are not in position to cast the top portion.

I have enclosed with this letter a product book to show you the facilities and equipment as well as samples of our products produced here at PITTRON. For any further information that you might need, please feel free to call.

Very truly yours,

H. C. Ahl
Manager-Marketing

mb
Encl.

Hawker Siddeley Canada Ltd.

Box 160, Montreal 3, Quebec. 482-8610

October 27, 1969

Murphy Pacific Enterprises,
4300 Eastshore Highway,
Emeryville, California,
U.S.A.

Attention: Mr. William R. Rielly, Engineer

Dear Sirs:

We acknowledge and thank you for your inquiry of October 16th covering Fixed Shoe Castings for Portland Fremont Bridge.

Having studied your requirements we comment as follows:

Reference Drawing K-3512/101

This casting, in our opinion cannot be produced to x-ray level, Class I.

We could produce it with some design modifications to Class III.

We suggest, however, that the centre lightener pockets be cast solid to produce a more satisfactory casting at possibly lower cost, even though the casting would be heavier and so thick as to be impossible to x-ray.

Reference Drawing K-3512/102

This casting, also, could not be produced to x-ray level, Class I, It would be possible to produce to Class V only.

We suggest that only the hub be made as a casting and the remained fabricated.

...2/

Attachment No. 3

Murphy Pacific Enterprises,
Emeryville, California.

October 27, 1969.

In both cases, we recommend that the magnaflux indications 3/8" or less, in length be left unrepaired.

Should you agree that modifications in line with our suggestions be acceptable, we will then advise our plant of the changes and have cost estimates prepared.

Yours very truly,

R.E.Groves,
Assistant to the
General Sales Manager,
Industrial Products

Number of foundries checked	350 approx.
Number of foundries contacted (Including six foundries noted below)	15
Number of foundries capable of casting over 50 ton items with x-ray equipment to meet the specifications – for sale rather than for own use	6
Number of bottom casting quotations received (with reduced severity levels)	3
Number of top casting quotations received (with reduced severity levels)	1

Attachment No. 4

FREMONT STREET BRIDGE

FIXED SHOE CASTING SEARCH

Machined Castings:

	MPE Letter	Response Letter	Telephone Contact	Response
Bethelehm Steel	8/25/69	6/19/69 9/3/69	X	No X-Ray
National Supply Div - Armco	6/16/69	6/18/69		Incapable
General Steel Industries	6/6/69	6/16/69		Could Not Deliver On Time
* National Forge	9/26/69	10/22/69	X	Quotation
Tha Falk Corporation	9/26/69	10/21/69	X	Bottom Only
Blaw Knox			X	No Quote
Pitron-Textron	9/26/69	9/30/69	X	Bottom Only
Washington Iron Works			X	Incapable
Baldwin-Lima-Hamilton			X	Incapable
Willamette Iron and Steel			X	Incapable
Allis Chalmers			X	Incapable
Esco			X	Incapable
United Engine & Foundry			X	Incapable
General Electric			X	None - On Strike
Hawker-Siddley/Canada (Canadian Steel Foundries)	10/16/69	10/27/69		Incapable

Machining Only:

Todd Shipyards Corporation	6/13/69			Incapable
* Bethlehem Shipyard, S.F.		1/30/70		Quotation
Faceco			X	Incapable
Wiegmann & Rose			X	Incapable

* Orders Placed

FREMONT STREET BRIDGE

FIXED SHOE CASTINGS

The following foundries are the only foundries in the United States, Canada and Mexico which have the capability of casting steel components over 50 tons and requiring radiographic inspection:

FOUNDRY	REMARKS
National Forge	Only complete bidder but to lower severity levels.
Bethlehem Steel	Pre-bid quotation before inspection requirements issued. Can not x-ray through 15" thickness. Will not allow importing portable inspection equipment.
Blaw Knox	Pre-bid quotation before inspection requirements issued. Will not quote to x-ray quality. Critical of design and specifications.
The Falk Corporation	Quoted bottom casting only with rough machining and to lower x-ray requirements.
General Electric	On strike at time of making inquiries. Could not contact due to length of strike. Doubtful of x-ray capability. 85% for own use, 15% for sale.
General Steel Industries	Could not quote because of backlog. Could not meet delivery required.
Pittron Textron	Quoted bottom casting only. Critical of design and specifications. Took exception to some machining.
Canadian Steel Foundries Hawker Siddeley Canada Ltd.	Can not produce bottom casting to x-ray level Class I, but could produce to Class III with some design modification. Cannot produce top casting to Class I either, but could produce to Class V only. Suggest hub cast and the rest of shoe fabricated. Cannot x-ray the 15" thickness.

Source of Information:
Steel Founders' Society of America Directory, 1969-70

NATIONAL FORGE COMPANY

IRVINE, WARREN COUNTY, PENNSYLVANIA 16329

March 17, 1970

Murphy Pacific Enterprises
P.O. Box 4335
Bayshore Station
Oakland, California 94623

RECEIVED
MAR 18 1970
Murphy Pacific Corporation

Attention: Mr. W. R. Rielly, Engineer

Subject: Fremont Bridge Fixed Shoe Top Casting
Your P.O. 69-FR-103
Our S.O. 88-8182-01-001 thru 004

Gentlemen:

As a result of serious dimensional deficiencies on the Top Shoe Castings, caused by floatation of the internal pocket cores, we are required to re-cast these castings.

In order to assure against a reoccurance and loss of additional castings, we must modify these castings slightly.

The attached sketch shows the necessary alterationsrequired. These alterations have been reviewed with Mr. L. G. Silano of Parsons, Brinckerhoff, Quade & Douglas, Inc. and they have tentatively indicated these alterations should be approved.

We will be casting two steel, 6" dia., inserts in the middle plate. The surface of these inserts will be, at random, torch scarfed with several grooves approximately 1/2 x 1/2 x 2" long. The molten metal will anchor to these grooves and mechanically secure these plugs in this plate section. There will not be a complete metallurgical bond between these inserts and the parent casting. Undoubtedly a demarcation will be visable on the castings at these interfaces. In addition two core support holes will be cast through the upper plate section as shown. Two cast plugs will be poured with each casting.

After the castings have been heat treated, we will full penetration weld with SAE 8018 weld rod the cast plugs in these two core support holes. To verify the weld soundness, we will subsquently radiograph these areas. Acceptance criteria of these x-rays will be the same as the balance of the casting. The location of the steel inserts will be the same as the location of the core supports as shown on the attached sketch.

Since delivery of these castings to you is of the utmost importance, we are proceeding with these modifications on the replacement castings. However, a formal approval should be obtained as soon as possible.

Attachment No. 5

Thus a copy of this letter and sketch is being forwarded to Mr. L. G. Silano in order to expedite obtaining this approval.

Very truly yours,

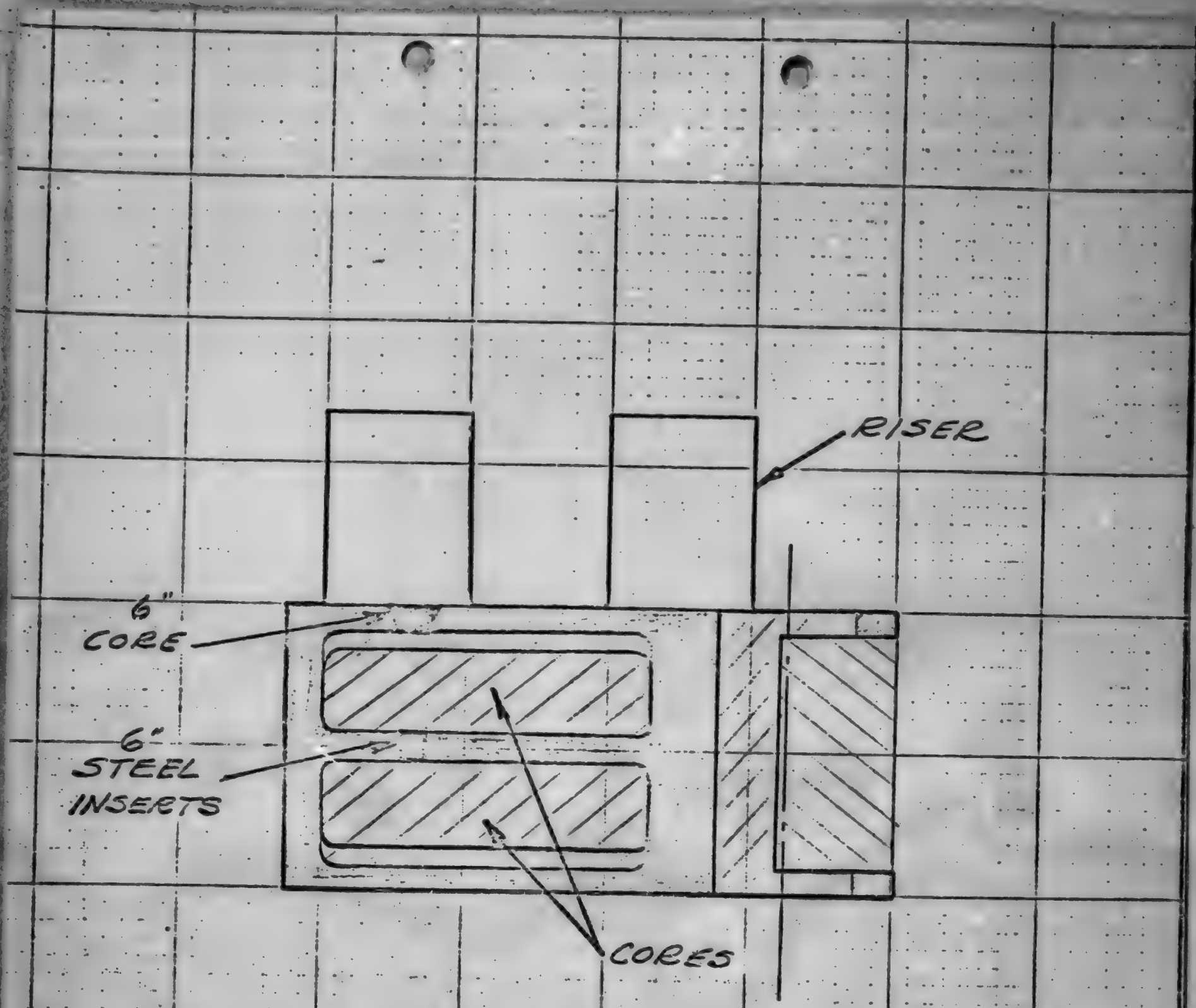
NATIONAL FORGE COMPANY

G. W. Poirier
Manager, Marketing Policy
and Customer Service -
Foundry Products

GWP/eds

Enclosure

CC: Mr. L. G. Silano
Project Engineer @ Parsons, Brinckerhoff, Quade & Douglas, Inc.

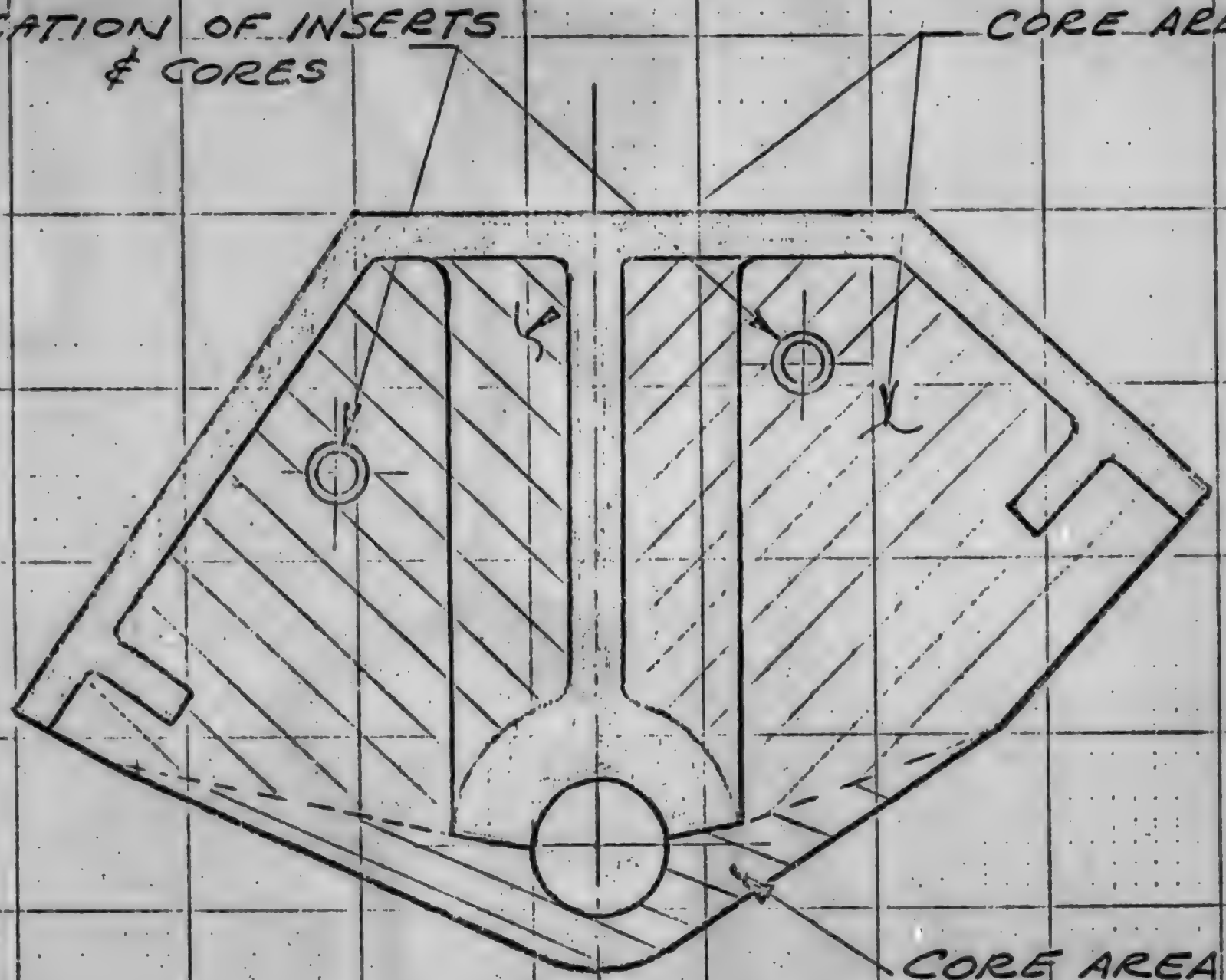


℄ CROSS SECTION

TOP SHOE

IN POURING POSITION

Attachment No. 6



TOP SHOE CORE PLAN

Attachment No. 7

NATIONAL FORGE COMPANY

IRVINE, WARREN COUNTY, PENNSYLVANIA 16329

October 19, 1971

Murphy Pacific Enterprises
4300 Eastshore Highway
Emeryville, California

Attention: Mr. W. R. Rielly
Engineer

Gentlemen:

In responde to your visit to Erie, Pennsylvania on October 14, 1971, and as a result of our discussions, we offer the following information:

Assuming that neither x-ray nor magnetic particle non-destructive testing would not have been required by specification in both the top and bottom shoe castings, we have attempted to estimate the number of manufacturing days that would have been required to upgrade the individual castings because of the non-destructive testing requirements.

TOP SHOES

	Pc. #4	Pc. #7	Pc. #8	Pc. #9
Chipping	10	8	11	15
Welding	20	15	16	20
Arc-Air	20	19	20	26
X-Ray	12	12	12	12
Total =	62	54	59	73

BOTTOM SHOES

	Pc. #1	Pc. #5	Pc. #6	Pc. #7
Chipping	14	15	15	19
Welding	10	7	5	7
Arc-Air	6	17	13	27
X-Ray	8	8	8	8
Total =	38	47	41	61

Attachment No. 8

Because of the x-ray requirements that were required on the split cylinder section of the Bottom Shoe Castings, it was necessary to have the center 6 inch thick plate redesigned. In looking back into possible causes for the failure of the three Bottom Shoes, the need for this redesign could be considered one of the possible contributing factors. The heavy mass of the redesigned rib dictated a riser size above normal. Even this large riser proved to be insufficient and can be considered a possible contributing factor to the casting failure. Had there not been any x-ray requirements on this area of the casting, normal foundry practice would have been to chill this heavy section of the casting without having to modify the original 6 inch thick center plate.

Originally we had requested Engineering to eliminate the two 4 inch thick outboard ribs in order to facilitate the core removal from the four confined pockets in these Bottom Shoe Castings. Because of these confined pockets, we were forced to spend excessive days in removing the fused core sand from these pockets.

It is normal foundry practice in making castings similar to the Top Shoe to use steel inserts for bearings in order to prevent similar cores from floating out of position due to their buoyance when the metal is still liquid in the mold. These heavy steel inserts (chaplets) proved to be inadequate because of the extreme forces applied to these cores, and thus the cores were displaced and castings rejected. By obtaining Engineering approval to use a core print bearing system, we were able to solve the problem on replacement castings.

Whenever multiple quantities of large castings are required of a new design configuration, the producing foundry would normally desire the opportunity to make sample castings for evaluation before pouring subsequent pieces. We were not afforded this opportunity in this case because of the tight delivery requirements. This led to the multiple loss of these castings since we were unable to make corrections to subsequent pieces before they had to be cast prior to the problems becoming known on the first pieces poured.

We hope that this information will prove helpful in obtaining an extension to your schedule.

Very truly yours,

NATIONAL FORGE COMPANY

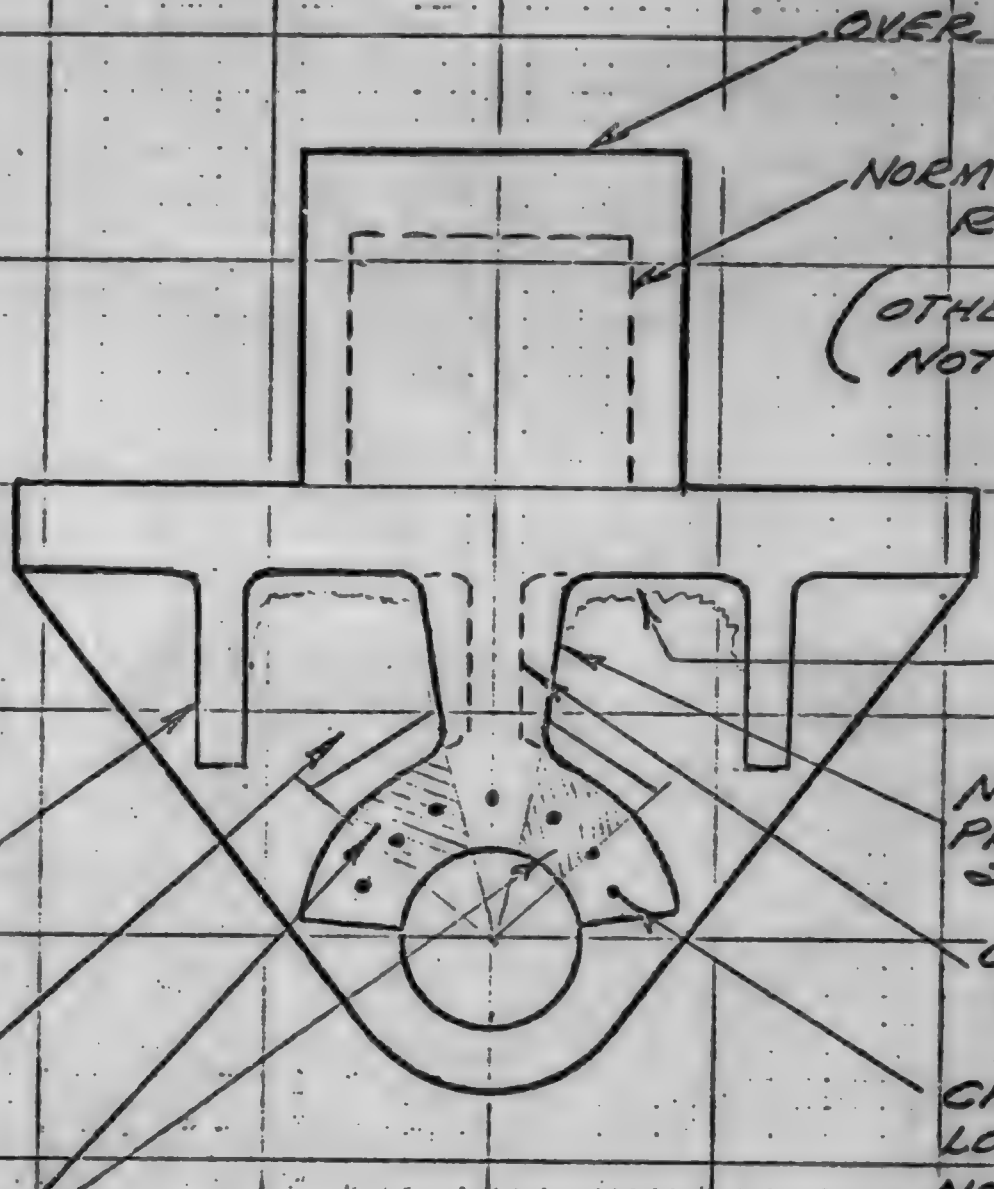
Mark A Ervin

Mark A. Ervin, Manager
SPECIAL COMPONENT SALES

MAE:bms

DICTATED BY: G. W. Poirier, Manager
MARKETING POLICY & CUSTOMER SERVICE, FOUNDRY PRODUCTS

cc: G. W. Poirier


OVER SIZE RISER
NORMAL SIZE RISER
(OTHER RISERS NOT SHOWN)
FUSED SAND
SIDE STIFF. NAT. FORGE SUGGESTED TO REMOVE POCKET
NAT. FORGE PROPOSED STIFFENER
ORIG. 6" STIFF. AS DESIGNED
CHILL EAR LOCATION IF NON X-RAY QUALITY
X-RAY ZONES

BOTTOM SHOE
IN POURING POSITION

Attachment No. 9

TABLE NO. 1

Sequence of Pours	Chemistry Number	C	Mn	Max. P	Max. S	Si	Max. Ni	Cr	Mo	Remarks
Top 001	1	.45/.50	.65/.75	.025	.025	.40/.50	--	--	--	Core Shift
Bot. 001	1	"	"	"	"	"	--	--	--	O.K.
Top 002	1	"	"	"	"	"	--	--	--	Core Shift
Bot. 002	1	"	"	"	"	"	--	--	--	Cracked
Top 003	1	"	"	"	"	"	--	--	--	Core Shift
Bot. 003	1	"	"	"	"	"	--	--	--	Cracked
Top 004	1	"	"	"	"	"	--	--	--	O.K.
Bot. 004	1	"	"	"	"	"	--	--	--	Cracked
Top 005	1	"	"	"	"	"	--	--	--	Cracked
Top 006	1	"	"	"	"	"	--	--	--	Cracked
Top 007	1	"	"	"	"	"	--	--	--	O.K.
Bot. 005	2	.30/.35	1.30/1.50	.015	.025	.35/.50	.50	.40/.60	.35/.40	O.K.
Bot. 006	3	.25/.30	1.20/1.40	.015	.015	.40/.50	.50	.40/.50	.25/.35	O.K.
Top 008	3	"	"	"	"	"	"	"	"	O.K.
Top 009	3	"	"	"	"	"	"	"	"	O.K.
Bot. 007	3	"	"	"	"	"	"	"	"	O.K.

Attachment No. 10

TABLE NO. 2

PHYSICALS OF ACCEPTED CASTINGS

Casting No.	Chemistry No.	Tensile psi	Yield psi	R.A. %	Elong. %	Remarks
Top 004	1	109000	60000	36.3	23.0	
Top 007	1	109000	57750	29.5	17.5	Accepted under approved waiver as ductility not specified.
Top 008	3	107000	76250	41.0	22.0	
Top 009	3	111500	98500	41.2	20.0	
Bot. 001	1	105000	56000	58.1	22.5	
Bot. 005	2	99000 100000	75000	51.9	24.0	
Bot. 006	3	94000	71000	59.8	24.0	
Bot. 007	3	103000	78500	53.8	22.0	
References:						
Specification Minimum		80000	55000	Not Specified	Not Specified	
Grade 80-50		80000	50000	35.0	22.0	

Attachment No. 11

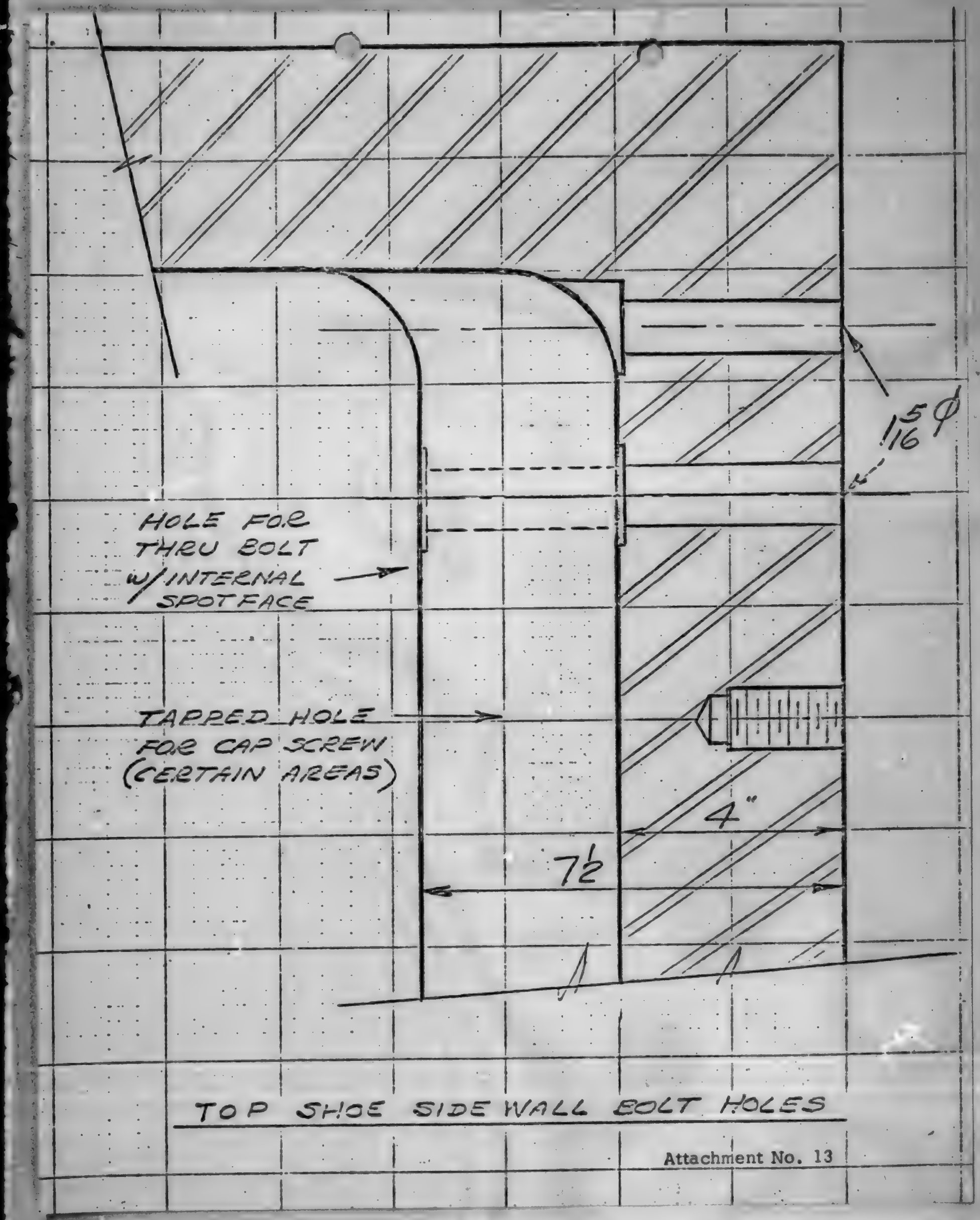
TIME RECORD OF REJECTIONS

Chemistry No. 1
Chemistry No. 2
Chemistry No. 3

1970

	March	April	May	June	July	August
Top 001	10th - Core Shifted					
002	16th - Core Shifted					
003	16th - Core Shifted					
004						
005			14th - Cracked			
006			11th - Cracked			
007						
008						
009						
Bottom 001						
002	6th - Cracked					
003	6th - Cracked					
004			20th - Cracked			
005			8th-			
006						
007						

Attachment No. 12



TOP SHOE SIDE WALL BOLT HOLES

Attachment No. 13

I-405-8(17) Fremont Bridge Sec., Stadium Freeway, in Portland (Superstructure) 1969
303
#7276
Folder #3

DEC 1 - 1971

FOR FILING

I-405-8(17)303
7276

November 30, 1971

Mr. R. E. Simpson
Division Engineer
Federal Highway Administration
P. O. Box 300
Salem, Oregon 97308

Dear Mr. Simpson:

Re: Fremont Bridge Superstructure
Contract 7276
FAP No. I-405-8(17)303

This contract was awarded July 3, 1969 and allotted 860 calendar days to complete the work, which forecast a completion date of on or about November 30, 1971. The contractor has suffered innumerable delays, some due to circumstances beyond his control and some due to conditions under his control, to the extent that our estimated date for completion of the work (prior to the near disaster at Panel Point 3) was February 20, 1973. Since the near disaster at Panel Point 3, neither we nor the contractor are in a position to determine even an estimated date for completion of the work.

Prior to the Panel Point 3 trouble, the contractor presented a request for an extension of time, requesting that the completion date for the work be advanced a total of 448 calendar days without assessment of liquidated damages. This request is briefly summarized on the attached "Summary Table" and illustrated on the attached "Delay Schedule".

We have reviewed the contractor's request in detail and have determined that he is entitled to extensions as follows for delay beyond his control:

3/18/70 to 3/27/70	Mail Strike	10 days
7/21/70 to 7/31/70	Stiffener Installation (Plan Change)	7 days
8/21/70 to 11/22/70	Panel Point 3 Revision (Plan Change)	94 days
4/15/71	Harbor Traffic Delays	1 day
5/3/71	Harbor Traffic Delays	1 day
6/4/71	Harbor Traffic Delays	1 day
6/25/71 to 7/29/71	Weld Repair, Girder 205-G1R (Delay occasioned by State in examination of crack in girder)	34 days
8/14/71 to 8/20/71	Railroad Restrictions (Restrictions on movement of of materials from material yard imposed by Railroad)	6 days
8/31/71	Unsafe work day (Federal Health & Safety Standards Act)	1 day
9/1/71	Same as above	1 day
9/5/71	" " "	1 day
9/16/71	" " "	1 day
9/17/71	" " "	1 day
9/28/71	" " "	1 day
9/2-3/71	Labor strike (Ironworkers)	2 days
	Total	162 days

With your concurrence, I propose to recommend that the contractor be granted 162 calendar days without assessment of liquidated damages. This is to be considered an

interim extension, as the Division is still studying the contractor's request for additional time due to delay in the production of the castings.

Very truly yours,

R. L. Porter
State Highway Engineer

By

A. E. Johnson
Assistant State Highway Engineer

Attachments

bc R. L. Porter
Tom Edwards
Ivan Merchant
R. L. Schroeder
Robert Cunningham

CAG:ag : ju

Summary Table
Fremont Bridge Delays

	Time Requested (Calendar Days)
A. Material Procurement	
1. Nickel Shortage (U.S. Steel)	114
2. Mail Strike	10
3. Plate Laminations	64
B. Fabrication	
1. Panel Point No. 3 Revision	94
2. Stiffener Installation (Price Agreement No. 6)	22
C. Yard Assembly	
1. Production of Top Bearing Castings	357
2. Paint Rejection (Yard Vinyl Application)	48
D. Erection	
1. Bearing Assembly Plate Location	366
2. Production of Bottom Bearing Casting Shoes	304
3. Weld Repair - Girder 205-GIR	54
4. Unsafe Working Conditions	8
5. Harbor Traffic	4
6. Labor Wildcat Walkouts	10
7. Railroad Restrictions	6

October 26, 1971

FREMONT BRIDGE DELAYS SCHEDULE

1970 | 1971

FEB. MAR APR. MAY JUNE JULY AUG SEPT OCT NOV. DEC. JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC.

Material Procurement

1. NICKEL SHORTAGE (USS) — Negotiated Fixing June 9 to Nov 14, 1969
2. MAIL STRIKE — 10 to 11
3. PLATE LAMINATION — 21 to 23

Fabrication

1. PANEL POINT 3 REVIS. — 21 to 22
2. STIFFENER INSTALLATION

Yard Assembly

1. PRODUCTION OF TOP BEARING CASTINGS — 9 to 5 (WEST SIDE); 27 to 20 (EAST SIDE)
2. PAINT REJECTION — 41

Erection

1. LAYOUT BEARING PLATES — 1 to 3
2. PROD. BOTTOM CASTING — 18 to 26; 5 to 15
3. ERECTION P.P. No. 3 — 9
4. UNSAFE WORKING COND.
5. HARBOR TRAFFIC — 8 (2 TOTAL)
6. LABOR WILDCAT WALKOUT — 9 to 16; 11 to 13
7. CIRCUS TRAIN — 14 to 15

OCT. 26, 1971

DEC 1 • 1971

OREGON STATE HIGHWAY DIVISION

I-405-8(17)303
7276

HIGHWAY BUILDING • • • SALEM, OREGON • • • 97310

November 29, 1971

Murphy Pacific Enterprises
P.O. Box 23007
Oakland, CA 94623

Attn: Mr. Frank J. Ortman
E.E.O. Officer

NOTED
A. E. J...

Gentlemen:

Re: Fremont Bridge
Stadium Freeway
F.A. Proj. No. I-405-8(17)303
Contract No. 7276

Reference is made to the EEO compliance review conducted at Portland on September 21, 1971. At that time, your Company was placed in a pending status concerning your compliance with Section 8 of the EEO Special Provisions and inclusions of the requirements contained in PR-1273 regarding procurement of materials over $10,000.

We have received copies of your letters to five unions and your journal of telephone calls to them through which you have notified them you were an equal opportunity employer and solicited their cooperation in referring minority group employees to you. We have also received copies of your letters to 25 materials suppliers notifying them of the contractural obligations under this contract relative to the nondiscrimination requirements.

The Oregon Highway Division now finds your Company in compliance with the EEO Special Provisions.

Thank you for your cooperation.

RECEIVED
NOV 29 1971
OFFICE OF
STATE HIGHWAY ENGINEER

Very truly yours,

F. D. Morgan
Construction Engineer

By M. D. Glenn

M. D. Glenn
EEO Engineer

MDG:fr
cc: Murphy Pacific Enterprises,
Portland, OR
bc: R. E. Simpson
A. E. Johnson
R. L. Schroeder
R. O. Cunningham

cy mailed 11-29-71

Form 8-128

RECEIVED
NOV 29 1971
FOR FILING

I-405-5(17)3C3
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
November 24, 1971

To: MEMO TO THE FILE

SUBJECT: Fremont Bridge
Contract 7276

At approximately 10:15 a.m. this date, I called Mr. Jay Murphy of Murphy Pacific Enterprises and inquired as to the status of plans for the removal of the broken piece at Panel Point 3 West and asked if he could give us an estimate as to when we could expect them.

Mr. Murphy stated that he wants to look at several things before he sends us a plan and that he has not made up his mind as to how he intends to go. He said they have retained the firm of Richardson, Gordon and Associates from Pittsburg, which was utilized on the St. Louis Arch, and mentioned the name of Mr. Norman Marks as a member of the firm or as connected with the firm. Richardson, Gordon and Associates will review the erection procedures followed by Murphy Pacific and will be recommending further procedures. Mr. Murphy said they were not "just doing nothing", are working on the problem, and were unable to give us an estimate of when they would submit their plan of further action.

At approximately 11 a.m., Mr. Ed Hardt of the Metropolitan Region office called to advise that a Mr. Kersten of Testing Engineers, Inc. was on the project with Mr. Harry Czyzewski of Metallurgical Engineers, Inc. Testing Engineers, Inc., is presumably working either for Murphy Pacific or U.S. Steel Corporation. The two got together and Mr. Kersten inquired as to why such small samples were being taken and why no sample was being taken of the river side of the lower flange welded to the machined piece. He suggested cutting out such a test sample with arc-air and taking a large enough piece so that the heated areas on the edges could be eliminated for testing.

Mr. Merchant later advised that he felt samples should be taken only in the proximity of the break in the lower flange in order not to weaken the structure member,

and that he personally saw no advantage in taking a test sample on the river side of the above-mentioned weld.

Mr. Hardt also advised that Mr. Dick Lieber of Earl and Wright was on the project and inquired of Resident Engineer Robert Cunningham why Panel Point 3 had not been jacked up to relieve stresses. Apparently, the feeling of our people is that this is an operation and responsibility of the contractor.

A. E. Johnson
Assistant State Highway Engineer

AEJ:ja

cc R. L. Porter
Tom Edwards
Ivan Merchant
L. I. Lindas
R. L. Schroeder
R. O. Cunningham

RECEIVED
DEC 1 1971
HWY. DIV.

FOR FILING

I-405-5(12)-C3
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon 97213
November 24, 1971

To: Robert Cunningham
Resident Bridge Engineer
B U I L D I N G

SUBJECT: Fremont Bridge
Contract No. 7276
Upper Deck Parapet Paint

NOTED
A. E. JOHNSON

In order to match the concrete parapet rails on the east and west appracches t. the Fremont Bridge, the inside and top of the steel parapet on the top deck should be painted with "concrete gray" vinyl paint instead of Celedon green.

As you know, the "concrete gray" being used on the two approaches is not the same shade, and you have been provided with color samples of both paints. You should have Murphy-Pacific select a color for both kinds of parapets of a shade between those of the approaches in order to provide the best transition possible.

R. L. Schroeder
Metropolitan Engineer

By:

Edward L. Hardt
Assistant Metropolitan Engineer

ELH:pb

cc: A. E. Johnson
Ivan Merchant
John Jenkins
John Howard
Robert Shotwell

CY Mailed 11-29-71

RECEIVED
NOV 29 1971
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUN 1 1971
FOR FILING

7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
November 23, 1971

SUBJECT:

To:
Mr. Tom Edwards
Mr. A. E. Johnson
Mr. F. B. Klaboe
Mr. L. I. Lindas
Mr. V. E. Skoog

There will be a meeting of the Claims Review Board Monday, November 29, 1971, in the Small Conference Room at 1:15 P.M.

The first item for review concerns a request for time extension on the Fremont Bridge Superstructure, Contract No. 7276. A representative from Murphy Pacific Enterprises, the contractor, will be present. The contract time allowed will expire about December 8, 1971 and the liquidated damages rate is $1,500 per day. The complete request from the contractor covers many pages, but the attached three sheets (summary table and two schedule charts) indicate the issues.

If time permits, we will review an adjustment and time claim on the Siuslaw River (Mapleton) Bridge Contract No. 7345. The contractor will not be present on this one and a proposed settlement of a claim presented by Wildish Construction Company will be reviewed. This arises from a significant quantity overrun in the General Excavation item. The contractor's computation deriving the money amount of the claim as revised is attached for your information. Excerpts from a Construction Section report on the claim are also attached.

John A. Bond, Secretary
Claims Review Board

NOTED
TOM EDWARDS

JAB:fw
Enc.
cc: I. D. Merchant
C. G. Swenson
R. L. Schroeder
R. D. Cunningham

RECEIVED
NOV 23 1971
OFFICE OF
STATE HIGHWAY ENGINEER

MURPHY PACIFIC ENTERPRISES

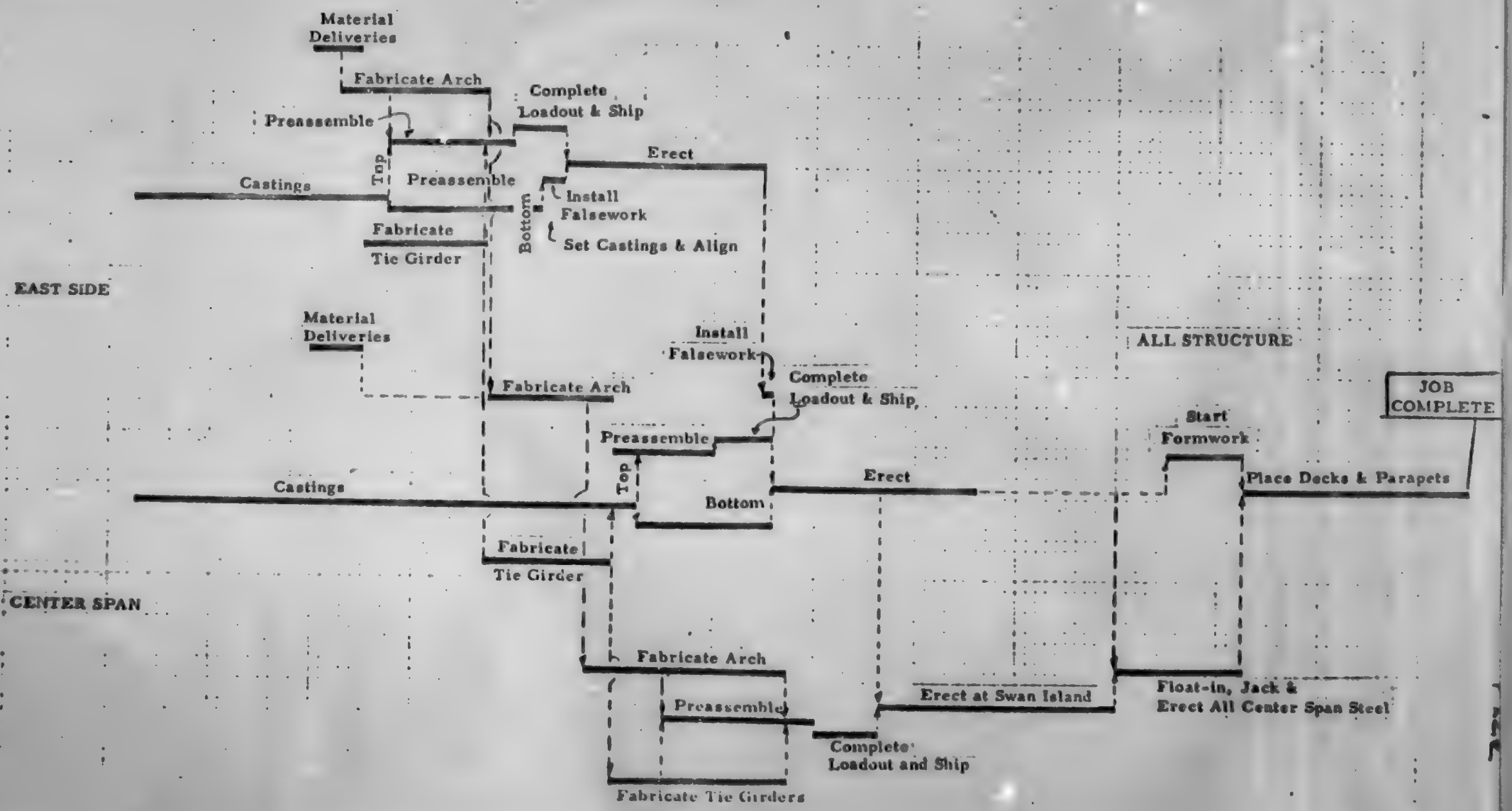
Fremont Bridge Superstructure

ORIGINAL SUMMARY SCHEDULE

Contract No. 7276

1969 | 1970 | 1971

JUL AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUNE JUL AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV



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Fremont Bridge Delays

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D. Erection	
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3. Weld Repair - Girder 205-GIR	54
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5. Harbor Traffic	4
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7. Railroad Restrictions	6

October 26, 1971

FREMONT BRIDGE DELAYS SCHEDULE

1970 | 1971

FEB. MAR APR. MAY JUNE JULY AUG SEPT OCT NOV DEC. | JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC.

Material Procurement

1. NICKEL SHORTAGE (USS) — Strike - Approx. Firm June 9 to Nov 14, 1969
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3. PLATE LAMINATION — 21 to 23

Fabrication

1. PANEL POINT 3 REVIS. — 21 to 22
2. STIFFENER INSTALLATION

Yard Assembly

1. PRODUCTION OF TOP BEARING CASTINGS — 9 to 5 (WEST SIDE); 27 to 20 (EAST SIDE)
2. PAINT REJECTION — 1 to 21

Erection

1. LAYOUT BEARING PLATES — 1 to 3; 18 to 26
2. PROD. BOTTOM CASTING — 5 to 6
3. ERECTION P.P. No. 3 — 9
4. UNSAFE WORKING COND. — 31
5. HARBOR TRAFFIC — (5 TOTAL)
6. LABOR WILDCAT WALKOUT — 16; 17 to 19; 23
7. CIRCUS TRAIN — 14 to 15

OCT. 26, 1971

RECEIVED
NOV 23 1971
FOR FILING

I-405-8(17)303
7276

November 23, 1971

Mr. R. E. Simpson
Division Engineer
Federal Highway Administration
477 Cottage Street, N. E.
Salem, Oregon 97301

Dear Mr. Simpson:

Re: Fremont Superstructure
Contract 7276
FAP No. I-405-8(17)303

You are aware of the recent developments during erection of the steel in the area of Panel Point 3 (see H. A. Schell's report of October 29, 1971 and your memo of November 15, 1971) and our program for investigation into the cause and possible correction of the problem. We are negotiating agreements with the firm of Metallurgical Engineers, Inc., for metallurgical investigation and with Howard, Needles, Tammen and Bergendoff for certain stress investigation.

Copies of our proposed agreements, with supporting data, are enclosed. Data submitted consists of:

3 copies - Howard, Needles, Tammen & Bergendoff agreement

3 copies - Howard, Needles, Tammen & Bergendoff proposal with supporting data

3 copies - State's estimate of cost for the work

3 copies - Metallurgical Engineers, Inc., agreement

3 copies - Metallurgical Engineers, Inc., proposal

3 copies - State's estimate of cost
for the work

Support data to the MEI proposal is incomplete. They have furnished support for the labor items and will furnish support for the rest of the items. This will be forwarded as soon as it is received from MEI.

Due to the highly specialized nature of the MEI work, it has been difficult for us to prepare a comprehensive comparison estimate. John Jenkins, in conjunction with Professor O. G. Paasche, School of Metallurgy, Oregon State University and Mr. Tom McClelland, School of Civil Engineering, Oregon State University, have made an evaluation that compares favorably with the MEI proposal to the extent that we consider the MEI proposal fair and equitable for both parties.

These data are submitted for your review and comment. May I have the results of your review at the earliest practicable date so that we can proceed with the final draft of the agreements as soon as possible.

Howard, Needles, Tammen and Bergendoff were authorized to proceed with their work on November 9, 1971 and Metallurgical Engineers, Inc. were authorized to proceed with their work on November 1, 1971. This is in line with your memo of November 15, 1971 (08-35.FA).

The Bridge Engineer of the Highway Division will administer the agreements.

Very truly yours,

R. L. Porter
State Highway Engineer

ORIGINAL SIGNED BY
By A.E. JOHNSON

A. E. Johnson
Assistant State Highway Engineer

Attachments

bc R. L. Porter
Tom Edwards
Ivan Merchant
L. I. Lindas
R. L. Schroeder
Robert Cunningham

CAG:dh ja

RECEIVED
NOV 24 1971
FUNDING

I 405-8(17)303
7276

November 22, 1971

Murphy Pacific Enterprises
P. O. Box 23007
Oakland, California 94623

Attention Mr. Jay Murphy

bc R. L. Porter
A. E. Johnson
Ivan Merchant (enc.)
L. I. Lindas "
R. L. Schroeder "
R. O. Cunningham "

Gentlemen:

Re: Contract 7276
Fremont Bridge

Reference is made to your letter of November 10, signed by Robert S. Lauter, regarding the subject project.

In this letter, Mr. Lauter stated that Murphy Pacific would proceed with providing us with a proposed method of operation to remove and replace the fractured girder and will inform us as to the availability of materials.

I would request that you expedite the submission of these plans so that the replacement may get under way expeditiously.

Very truly yours,

R. L. Porter
State Highway Engineer

By

Tom Edwards
Deputy State Highway Engineer

cc Mr. Robert S. Lauter
Murphy Pacific Enterprises

Mr. Jack Geer, Project Manager
Murphy Pacific Enterprises
5051 North Channel
Portland, OR 97217

United Pacific Insurance Company
General Insurance Company
American Insurance Company

AEJ/TE:ja

RECEIVED
NOV 16 1971

7276

MURPHY PACIFIC ENTERPRISES

4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

November 10, 1971

Mr. Tom Edwards
Deputy State Highway Engineer
Oregon State Highway Division
Highway Building
Salem, Oregon 97310

NOTED
A. E. Johnson

cy to Greenbank
Ed Hoedt
11-15-71

Re: CONTRACT 7276
FREMONT BRIDGE

Dear Sir:

This will acknowledge receipt of your two letters of November 5, 1971

One of those letters related to the elevation of Falsework 2 on the East back span. The instructions contained therein will be followed.

The second of those letters related to two items: (1) the removal and replacement of the fractured girder and (2) removal of the test sample.

Our telephone conversation yesterday clarified item (1). It is our understanding that we are to provide you with a proposed method of operation to remove and replace the fractured girder and inform you as to the availability of materials. We are to do nothing further concerning the fractured girder until after the cause of the failure has been determined. We will proceed accordingly.

As to item (2) we understand that the test sample will be removed by others. We will have no responsibility therefor or for any safety risks engendered thereby.

We intend to make claim for additional and extra compensation in accordance with our letter of November 3, 1971.

Very truly yours,

Robert S. Lauter

RECEIVED
NOV 12 1971
OFFICE OF
STATE HIGHWAY ENGINEER

cc: Messrs. Jay Murphy
D. Shupp
A. Kostelic
J. Geer
R. Fields
M. Waldman
B. Choate

AEJ

NOTED
TOM EDWARDS

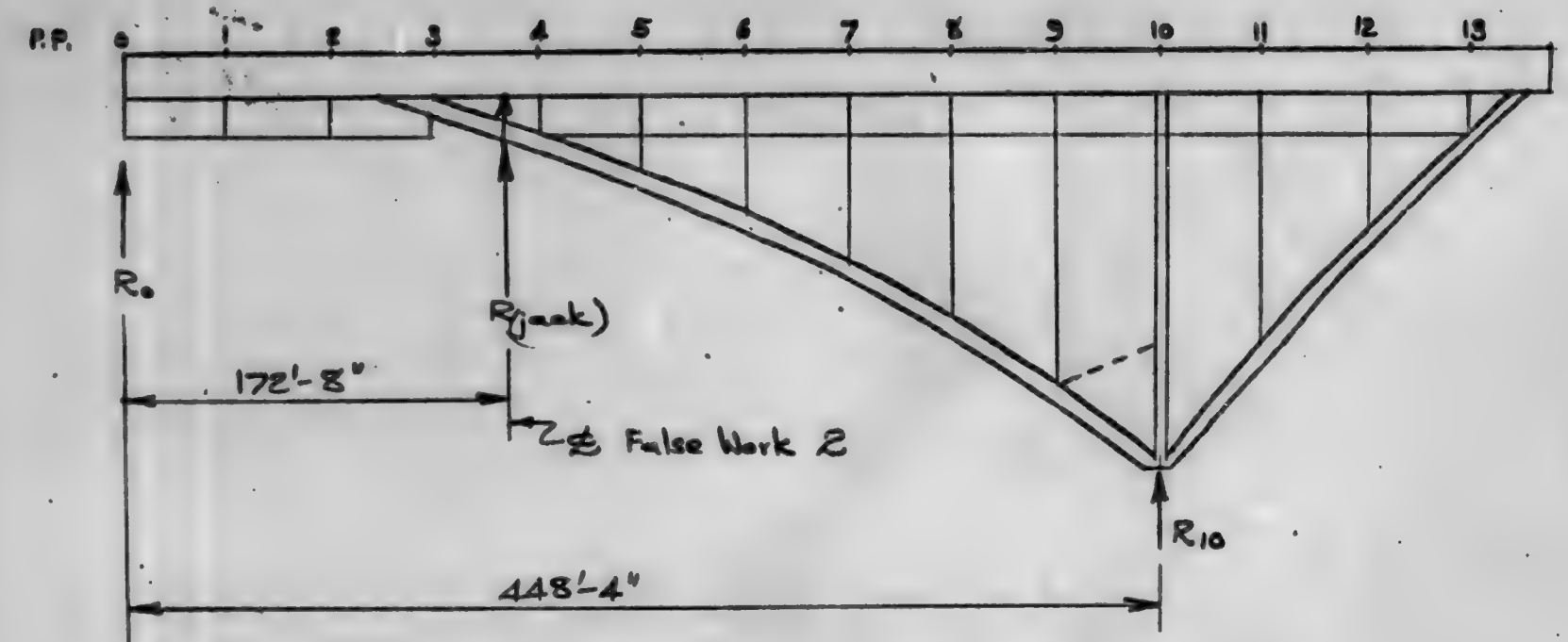
7276

Oregon State Highway Division
BRIDGE DESIGN UNIT

Bridge ..... Fremont Bridge ..... Sheet ..... of .....

Calculations by ..... KAK ..... Date ..... 11-12-1971 ..... County ..... Mult. .....

Bridge No. 2529



R(jack)	R₀	R₁₀	Mmt., at P.P. 3
1700 k	290 k	3283 k 2887 k	
500 k	1028 k	3349 k 3382 k	+72,284 k-ft.
0 k	1335 k	3542 k	+113,575 k-ft.
0 k	1581 k	4212 k	+138,832 k-ft.

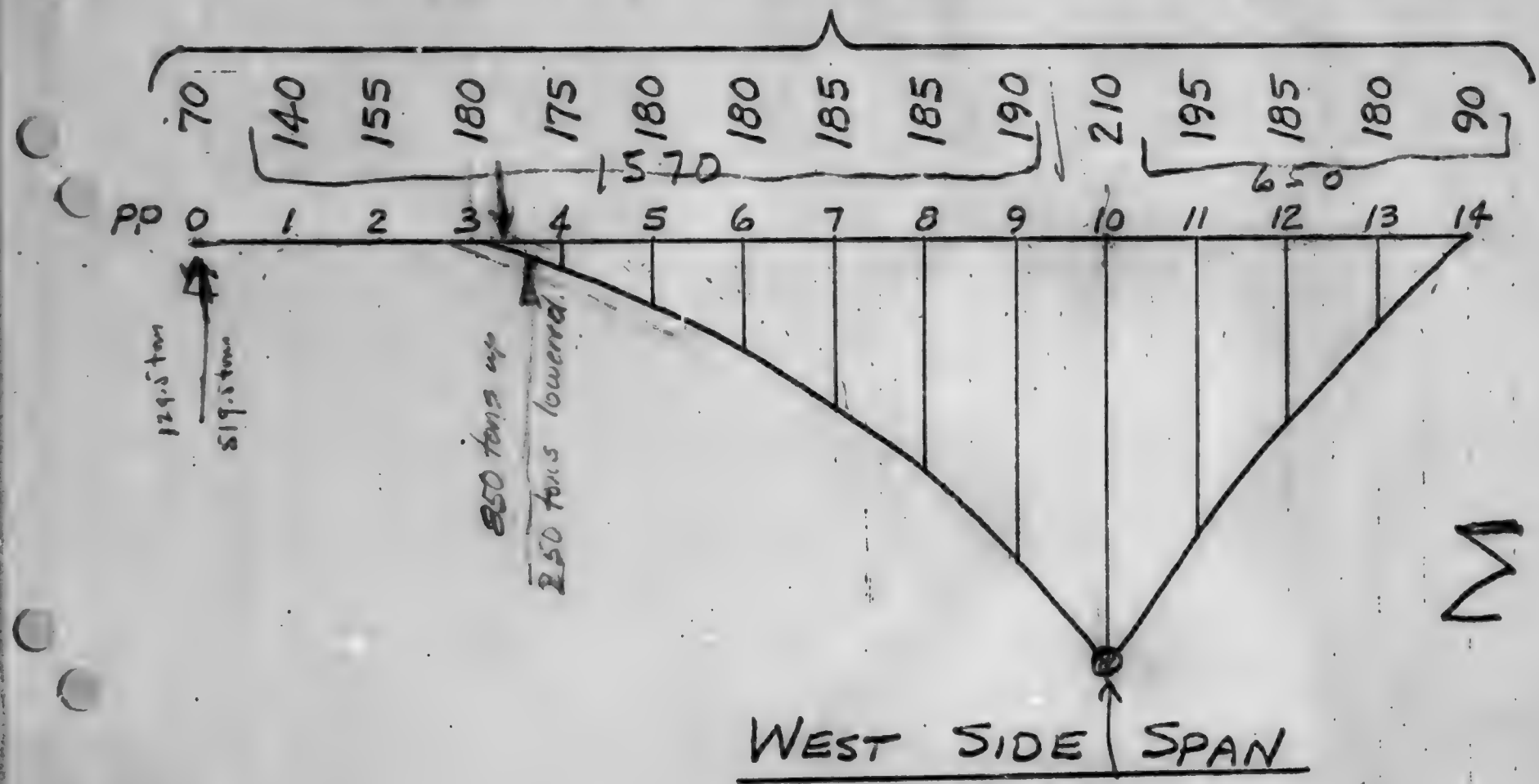
Compression in top flange ℄

Consultant's figs.

Note: Reactions shown are per bearing assembly

NOTED
TOM EDWARDS

Approx. panel loads in tons , 2500 tons total



$\Sigma V =$

WEST SIDE SPAN

11-12-71
JAW

Form E-186—1064—11-64
SP 5370-734

Job No. .....

Sheet ..... of ..... Sheets

OREGON STATE HIGHWAY DEPARTMENT

Calculations for .....

Made by ....., 19..... Checked by ....., 19..... Backchecked by ....., 19.....

FREMONT BRIDGE

SUPERSTRUCTURE

STADIUM FREEWAY

MULTNOMAH COUNTY

WEST SPAN PORTAL

DATE: NOV. 9, 1971

BRIDGE NO.: 2529

RESIDENT ENGINEER: R.O. CUNNINGHAM

Form E-106—10M—11-64
SP 570-734

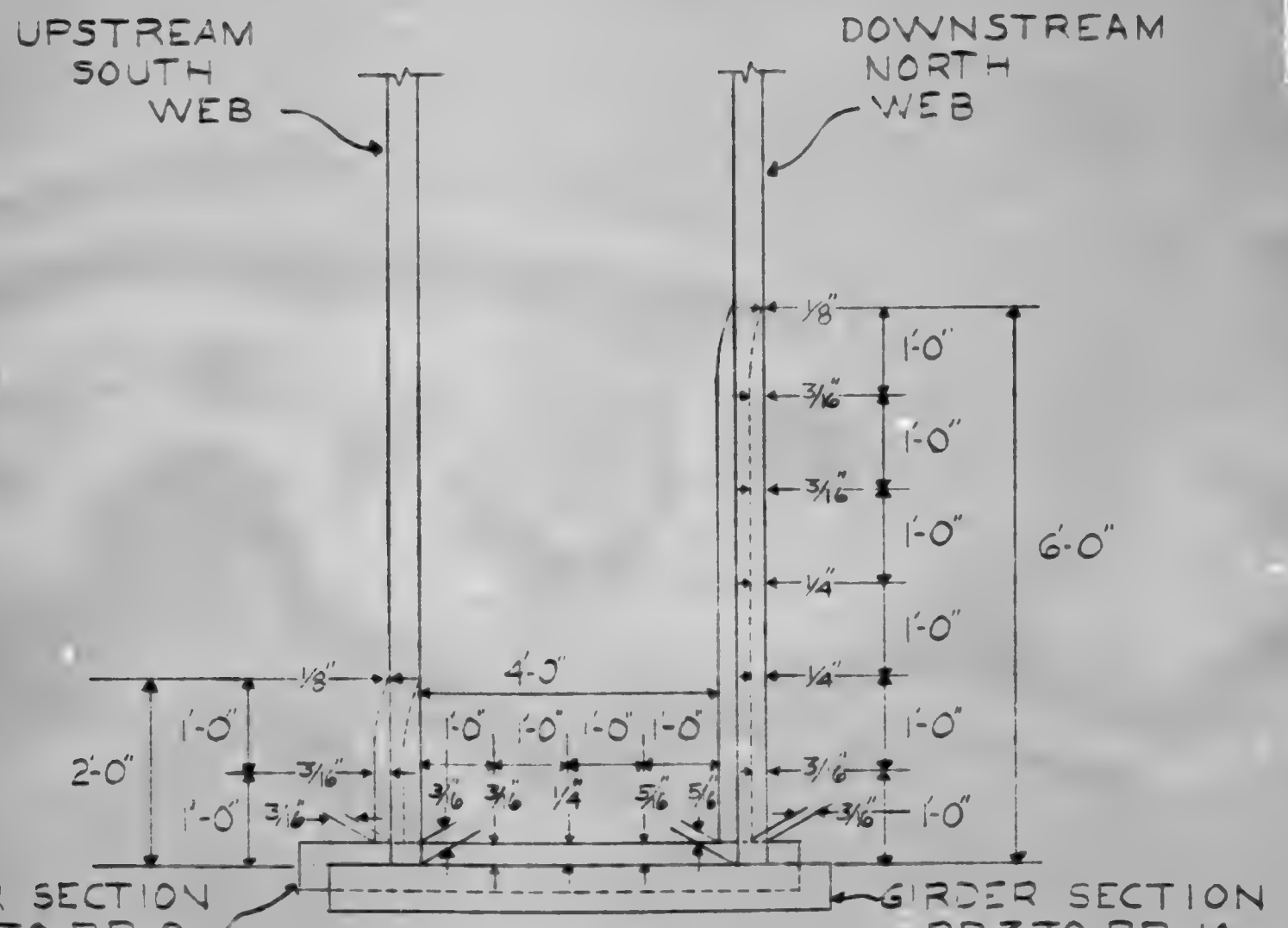
Job No. 7276

Sheet 1 of 1 Sheets

OREGON STATE HIGHWAY DEPARTMENT

Calculations for DISPLACEMENT OF GIRDERS AT CRACK

Made by S. SAUNDERS, 1971 Checked by ....., 19..... Backchecked by ....., 19.....



NOTE:

TAPERED SECTION AT THE BOTTOM OF THE WEBS NOT SHOWN.

Form E-106—10M—11-64
SP 6370-734

Job No. 7276

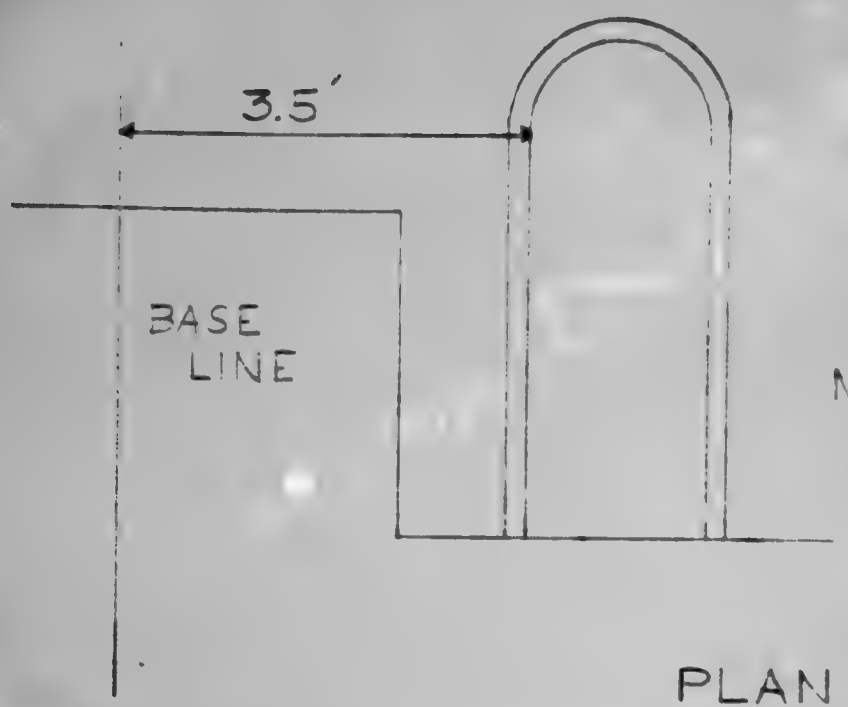
Sheet 1 of 2 Sheets

OREGON STATE HIGHWAY DEPARTMENT

Calculations for DEFORMATION IN WEST PORTAL AT P.P-0

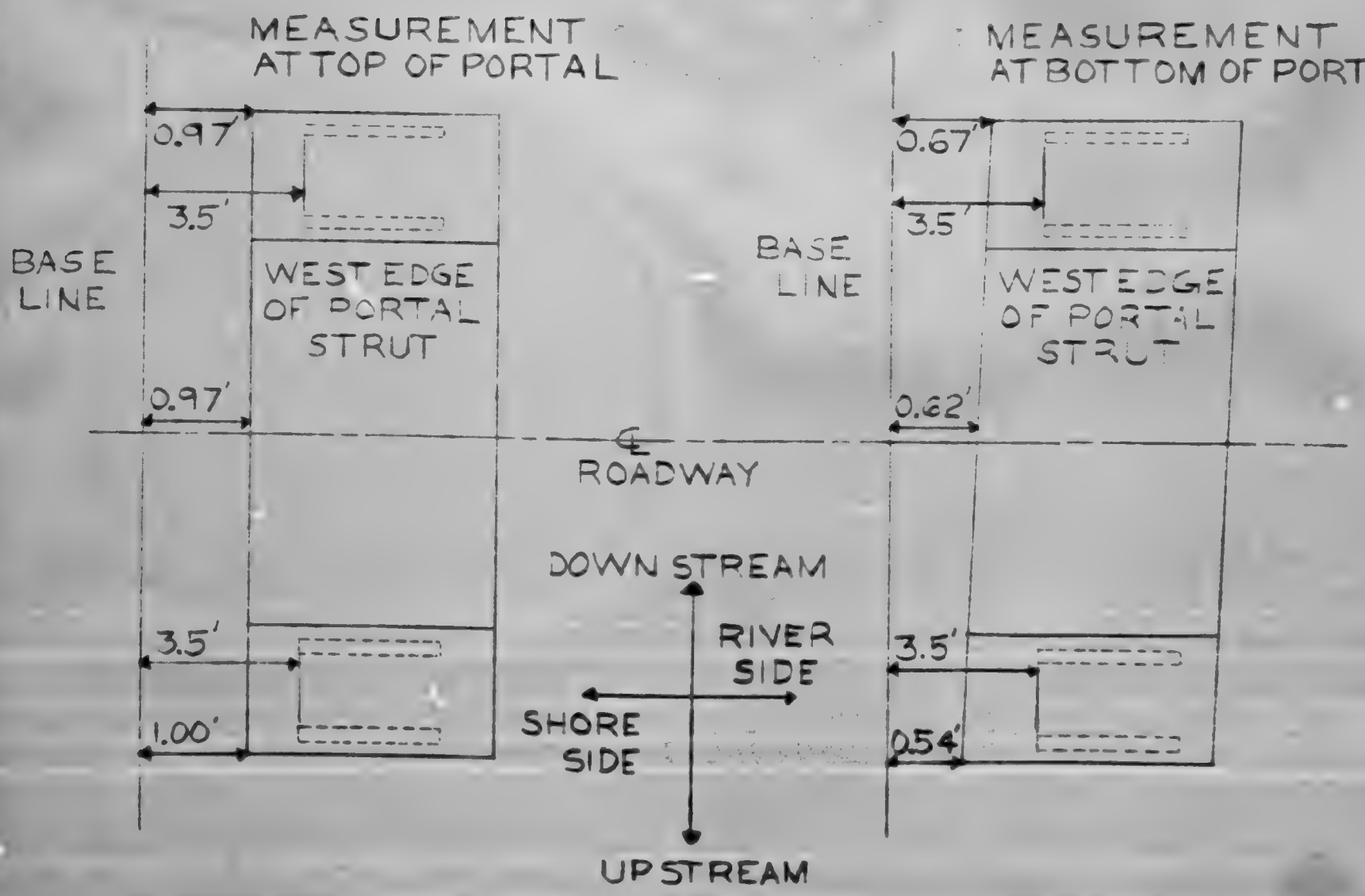
Made by S. SAUNDERS, 1971. Checked by ....., 19..... Backchecked by ....., 19.....

DATE: 11-5-71
TEMP: CLEAR - 43°F



MEASUREMENT FROM NORTH & SOUTH WINDOWS TO BASE LINE

PLAN VEIW



Form E-106—1084—11-44
SP 6370-784

Job No. 7276

Sheet 2 of 2 Sheets

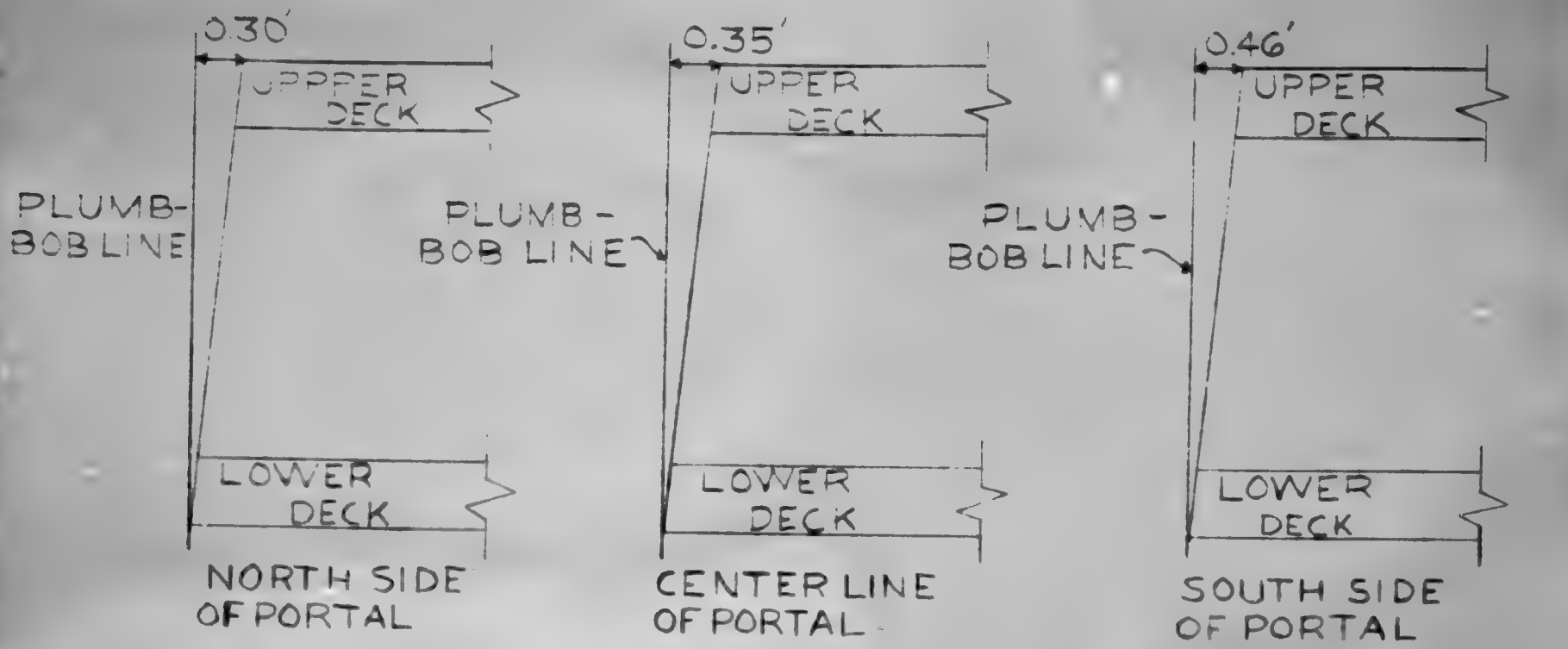
OREGON STATE HIGHWAY DEPARTMENT

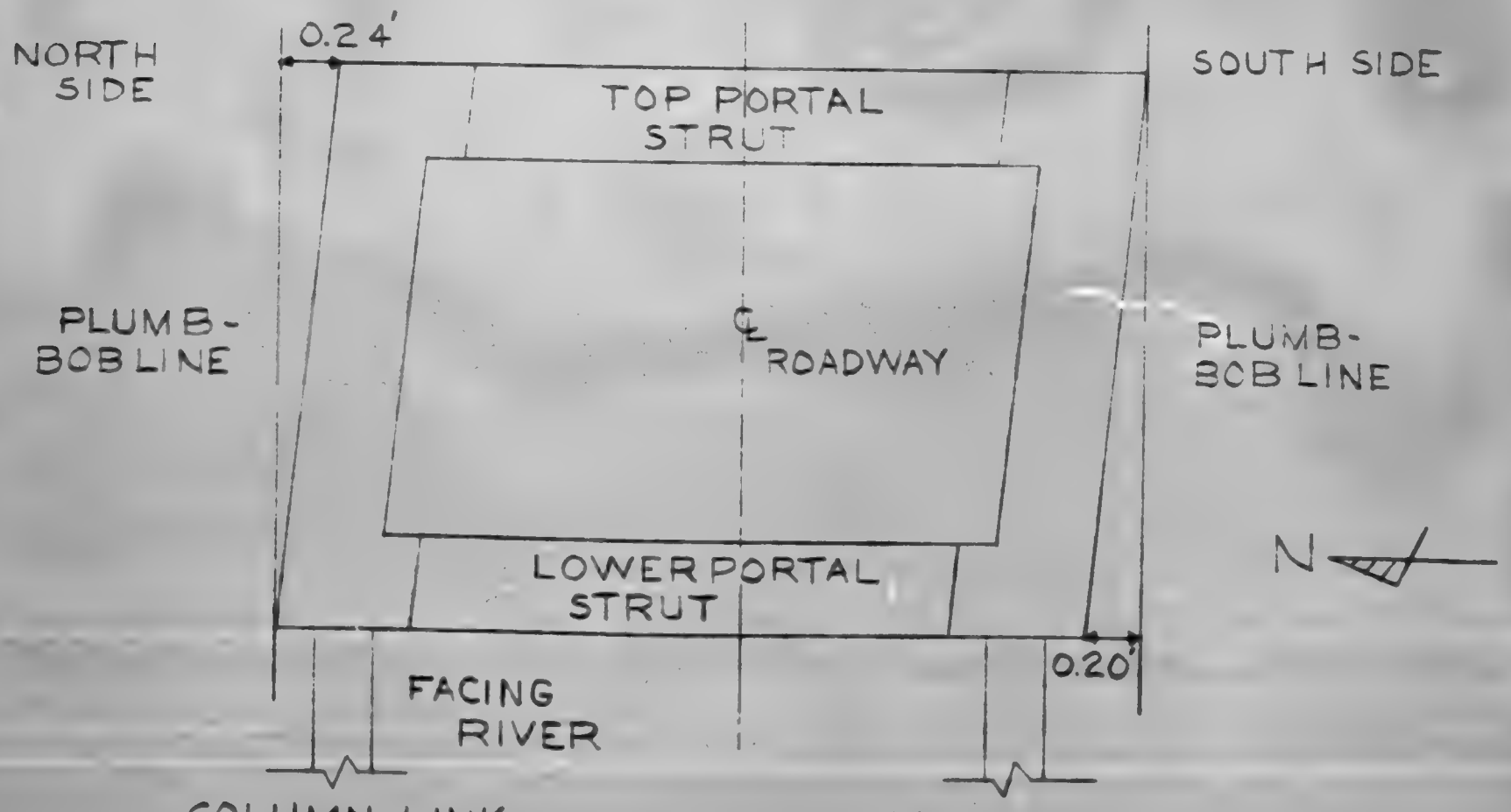
Calculations for DEFORMATION IN WEST PORTAL AT P.P-0

Made by S. SAUNDERS, 1971 Checked by ....., 19..... Backchecked by ....., 19.....

DATE: 11-5-71
TEMP: CLEAR- 43°F

ELV-VEIW: CROSS SECTION OF PORTAL





Form E-106—10M—11-64
SP 6370-736

Job No. 7276

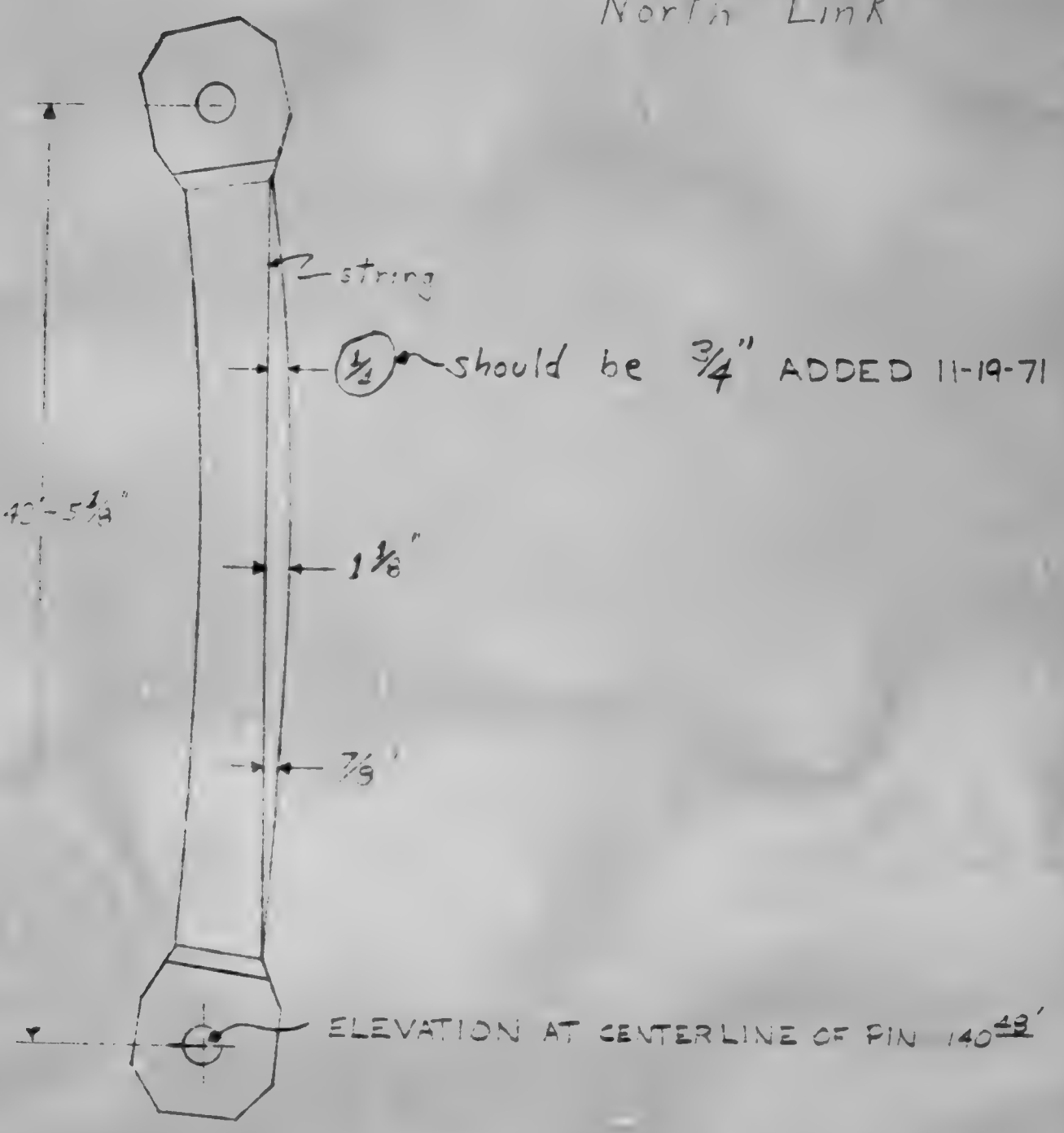
Sheet 1 of 2 Sheets

OREGON STATE HIGHWAY DEPARTMENT

Calculations for Deflection of Links in Portal Frame at FP-0

Made by D. Schut, 19 71 Checked by ..... 19..... Backchecked by ....., 19.....

North Link



Deflections were measured at the quarter points and the midpoint of each link and on both flanges of the links. Both links are loaded to the west.

Form E-186—1/66—11-64
SP 8870-734

Job No. 7276

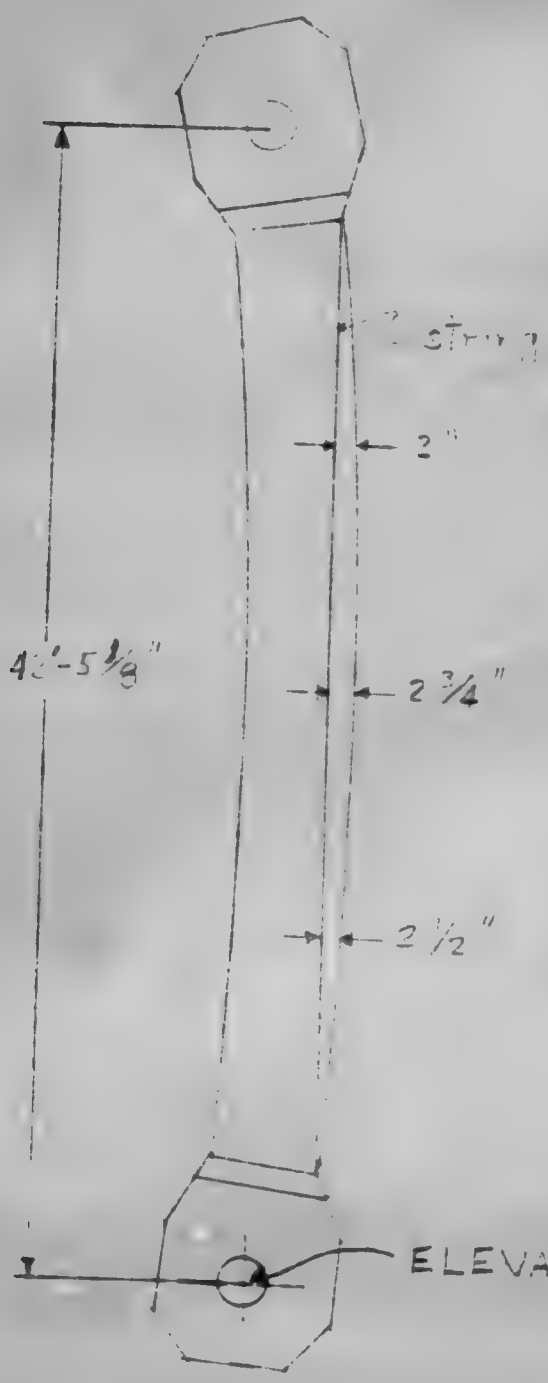
Sheet 2 of 2 Sheets

OREGON STATE HIGHWAY DEPARTMENT

Calculations for Deflection of Links in Portal Frame at PP-0

Made by D. Schut, 1971 Checked by ....., 19..... Backchecked by ....., 19.....

South Link



River side of link

OREGON STATE
HIGHWAY DEPARTMENT

METROPOLITAN SECTION

5821 N.E. GLISAN • PORTLAND, OREGON • 97213 • Phone 235-8911

November 24, 1971

Fremont Bridge Superstructure
Stadium Freeway
Contract No. 7276

Samples of Girder 205 G1L

Murphy Pacific Enterprises
SWAN ISLAND

Attention: E.D. Geer

Gentlemen:

This is to confirm our telephone conversation of Nov. 22,1971. In which I advised you of our intension to start removal of samples on Wed. Nov. 24 and you agreeded that this was a satisfactory date.

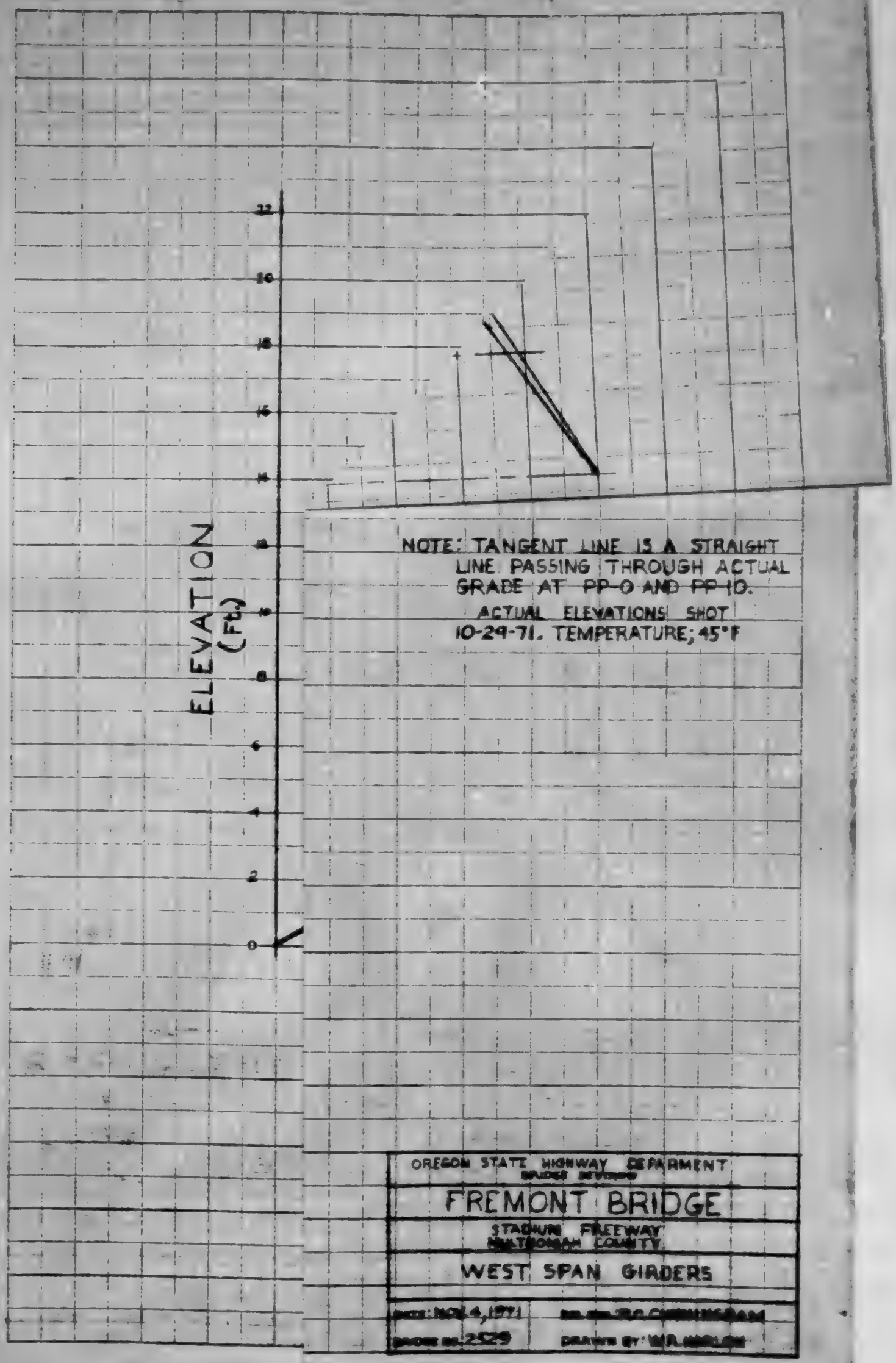
Respectfully,

R.O. Cunningham
Resident Bridge Engineer

ROC:dgh

cc: Edwards
Merchant
Schroeder
file

RECEIVED
NOV 29 1971
OFFICE OF
STATE HIGHWAY ENGINEER



NOTE: TANGENT LINE IS A STRAIGHT LINE PASSING THROUGH ACTUAL GRADE AT PP-0 AND PP-10.

ACTUAL ELEVATIONS SHOT 10-29-71. TEMPERATURE; 45°F

OREGON STATE HIGHWAY DEPARTMENT
BRIDGE SECTION

FREMONT BRIDGE

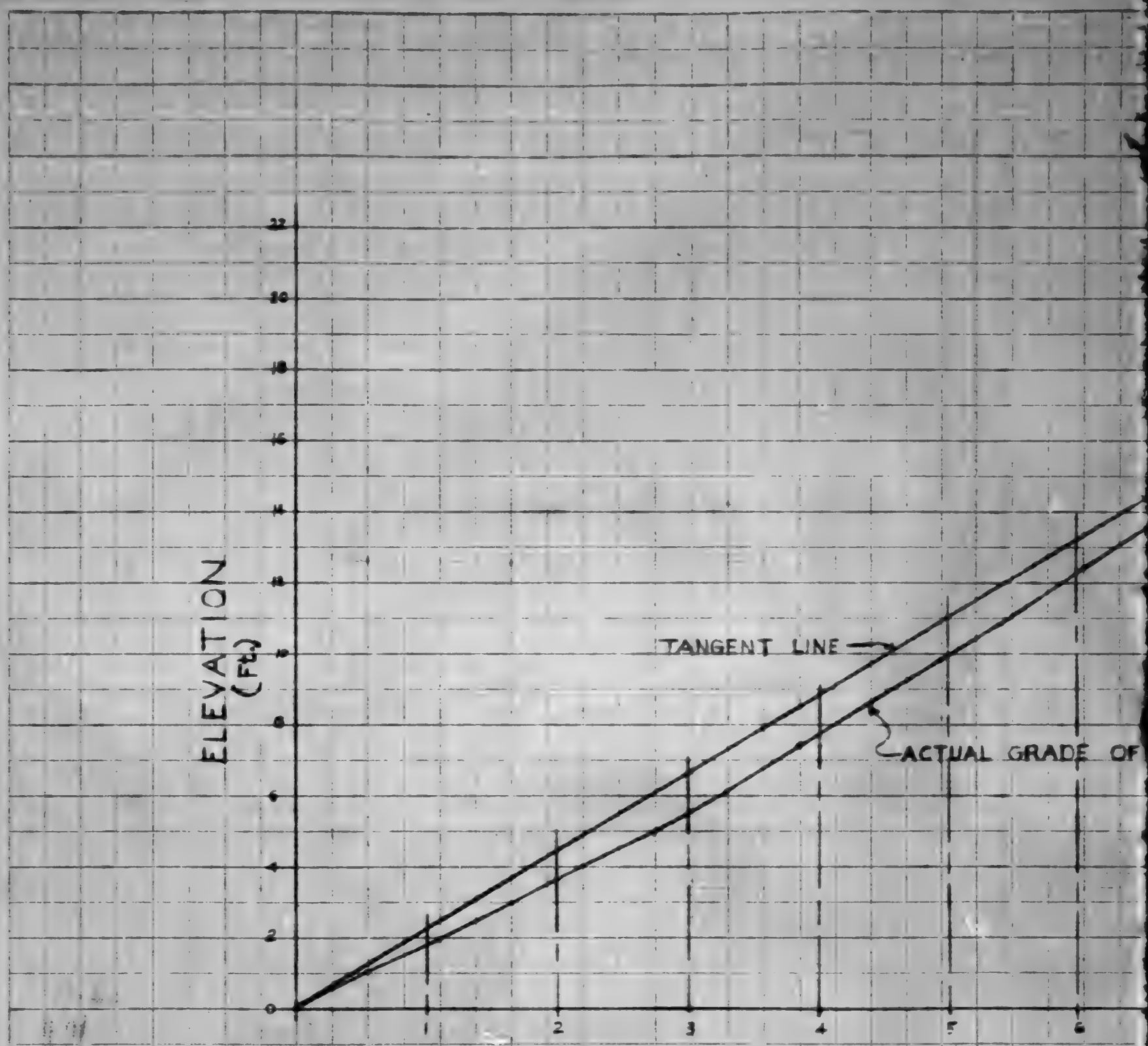
STADIUM FREEWAY
MULTNOMAH COUNTY

WEST SPAN GIRDERS

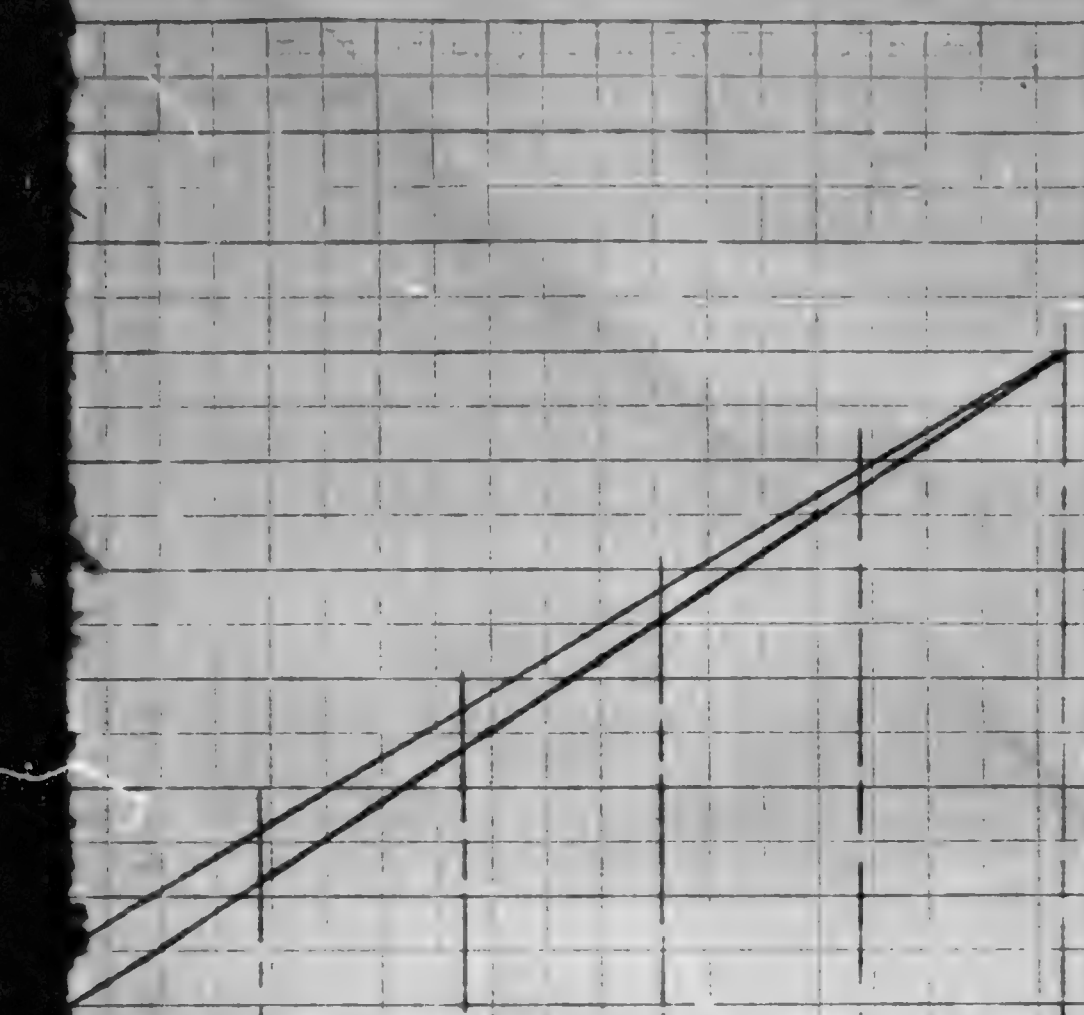
DATE: NOV 4, 1971 — DES. DRN. R.C. CUNNINGHAM

DRAWING NO. 2529 — DRAWN BY: W.R. HARLOW

KEUFFEL & ESSER CO. N Y



PLOT OF TANGENT LINE AND ACTU
GIRDER ELEVATION BETWEEN PP.



NOTE: TANGENT LINE IS A STRAIGHT LINE PASSING THROUGH ACTUAL GRADE AT PP-0 AND PP-10.

ACTUAL ELEVATIONS SHOT 10-29-71. TEMPERATURE; 45°F

UAL GRADE OF GIRDERS

6 7 8 9 10

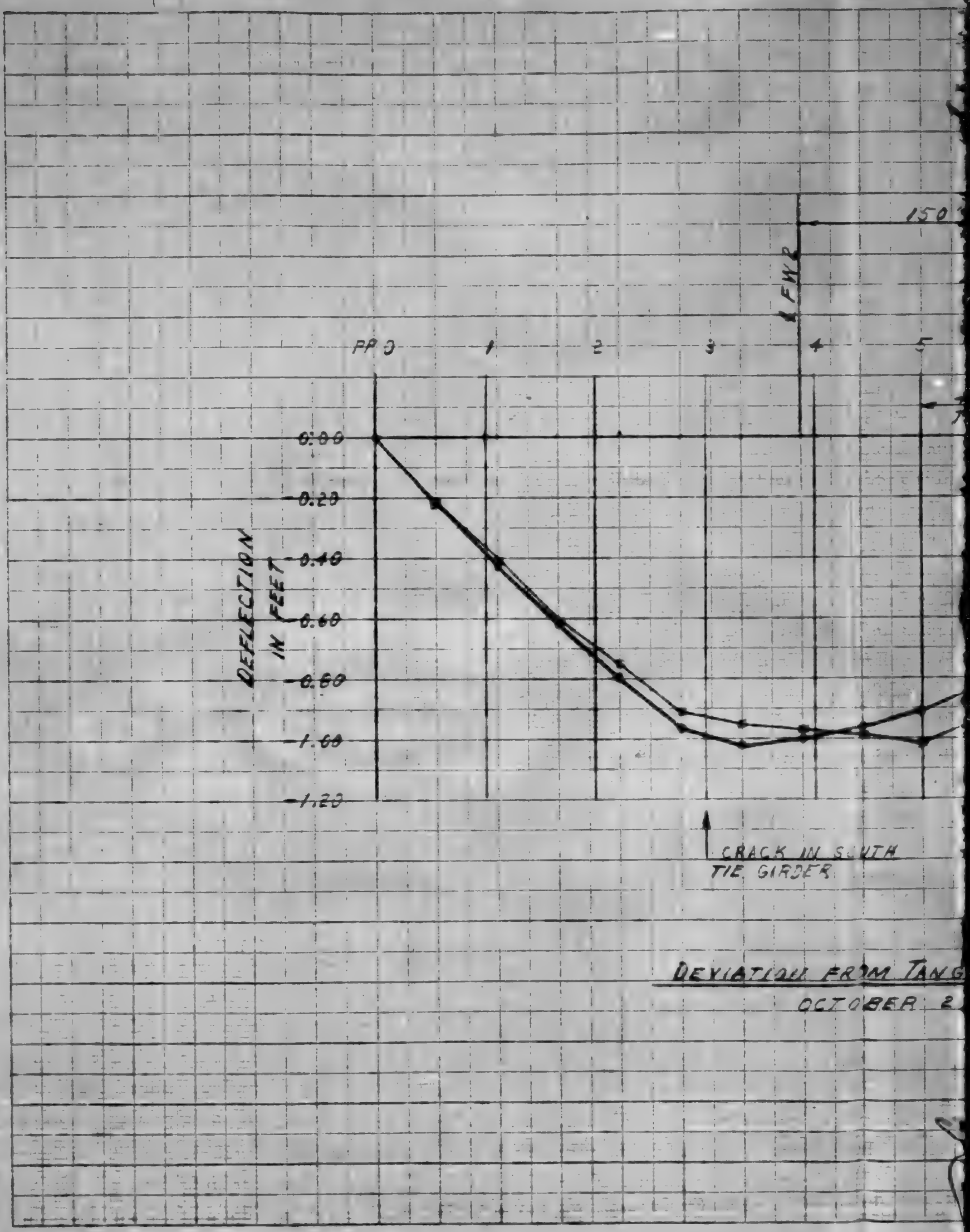
POINTS

E AND ACTUAL

TWEEN P.P.0 AND P.P.-10.

OREGON STATE HIGHWAY DEPARMENT
FREMONT BRIDGE
STADIUM FREEWAY MULTNOMAH COUNTY
WEST SPAN GIRDERS
DATE: NOV. 4, 1971
DRAWING NO. 2529

KEUFFEL & ESSER CO N Y



DEVIATION FROM TANG

OCTOBER 2

150'-8"

125'-0"

℄ FWL

5 6 7 8 9 10

44'-10" Typ.

TANGENT LINE BETWEEN P.P-9 AND P.P-10

SOUTH GIRDER

NORTH GIRDER

NOTE: TANGENT LINE IS A STRAIGHT LINE PASSING THROUGH ACTUAL GRADE AT PP-9 AND PP10.

ACTUAL ELEVATIONS SHOT 11-3-71. TEMPERATURE; 45°F.

SOUTH

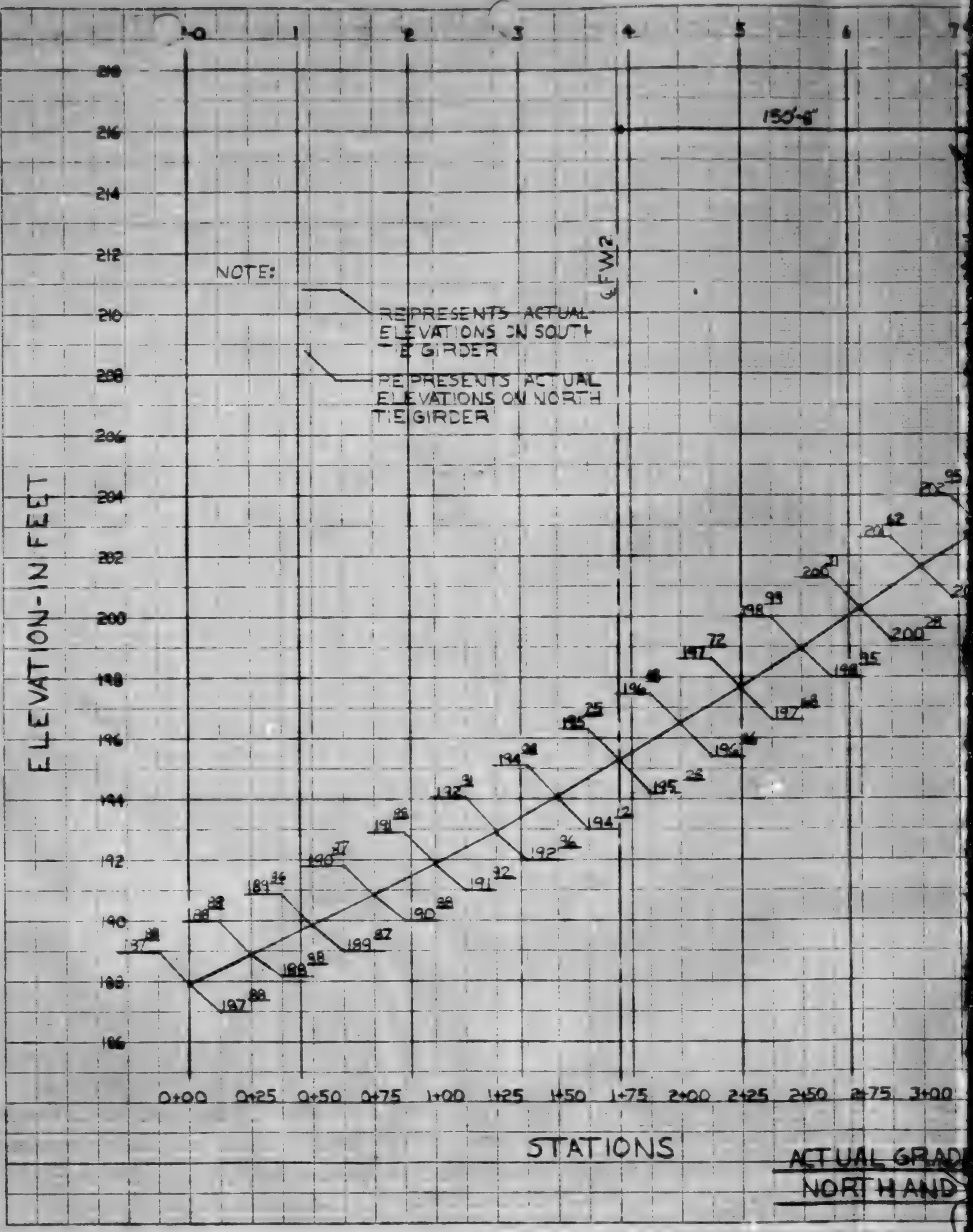
RM TANGENT LINE

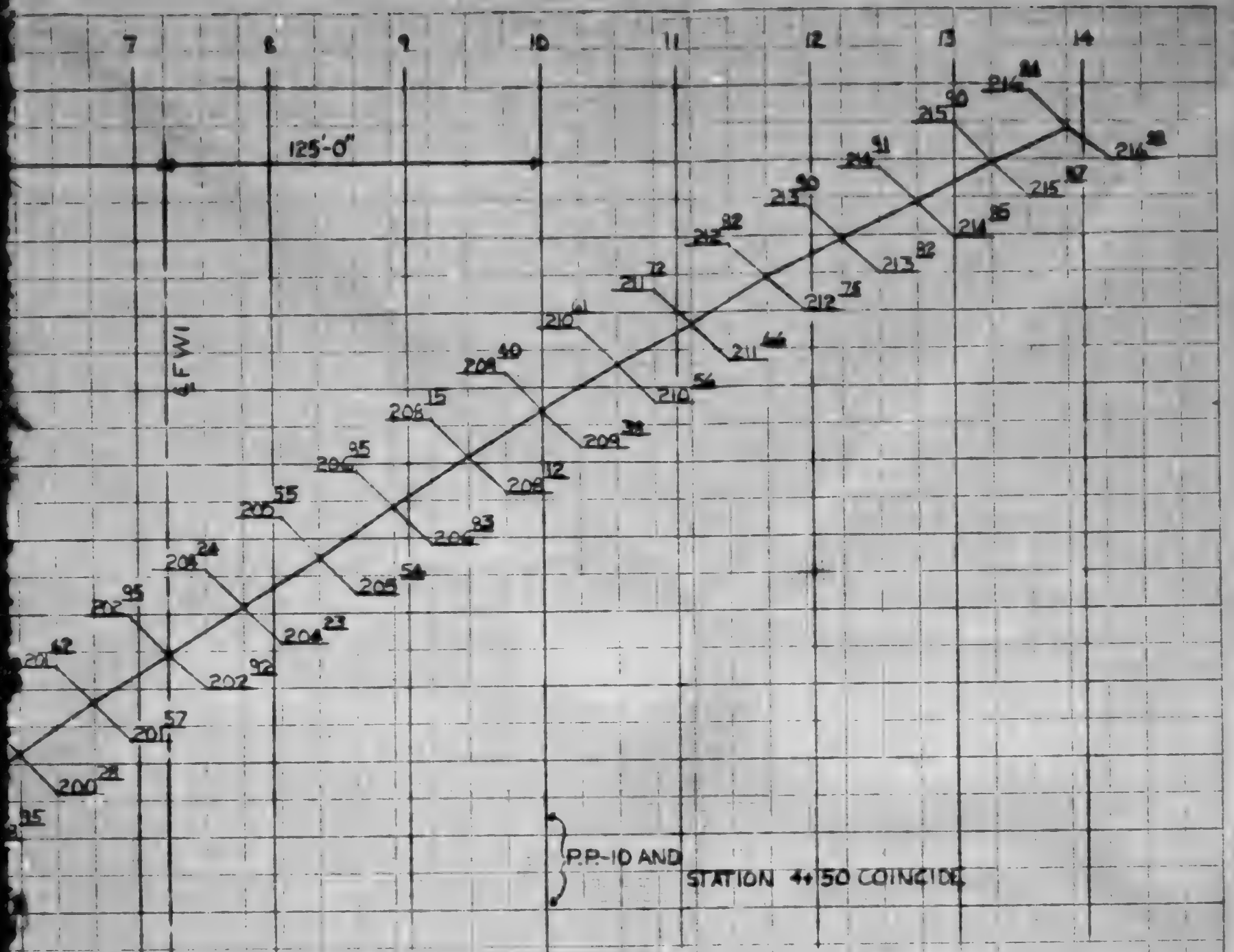
TOBER 29 '71

OREGON STATE HIGHWAY DEPARTMENT BRIDGE DIVISION	
FREMONT BRIDGE	
STADIUM FREEWAY MULTNOMAH COUNTY	
WEST SPAN	
Date: OCT 29, 1971	Asst. Engr.: R.D. CUNNINGHAM
Bridge No. 2529	Proj. Engr.: J.A. BROAD

KEUFFEL & ESSER CO.

ENGRAVING 334-3, 10 X 10 TO THE HALF INCH
WHEN ORDERING STATE COLOR RULING OR TRACING PAPER
MADE IN U.S.A.
1963 GRID PAPER





NOTE:
ACTUAL ELEVATION SHOT 11-12-71
TEMP. 49°F

2+75 3+00 3+25 3+50 3+75 4+00 4+25 4+50 4+75

5+00 5+25 5+50 5+75 6+00 6+25

UAL GRADE

RTH AND SOUTH TIE GIRDERS

OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

FREMONT BRIDGE

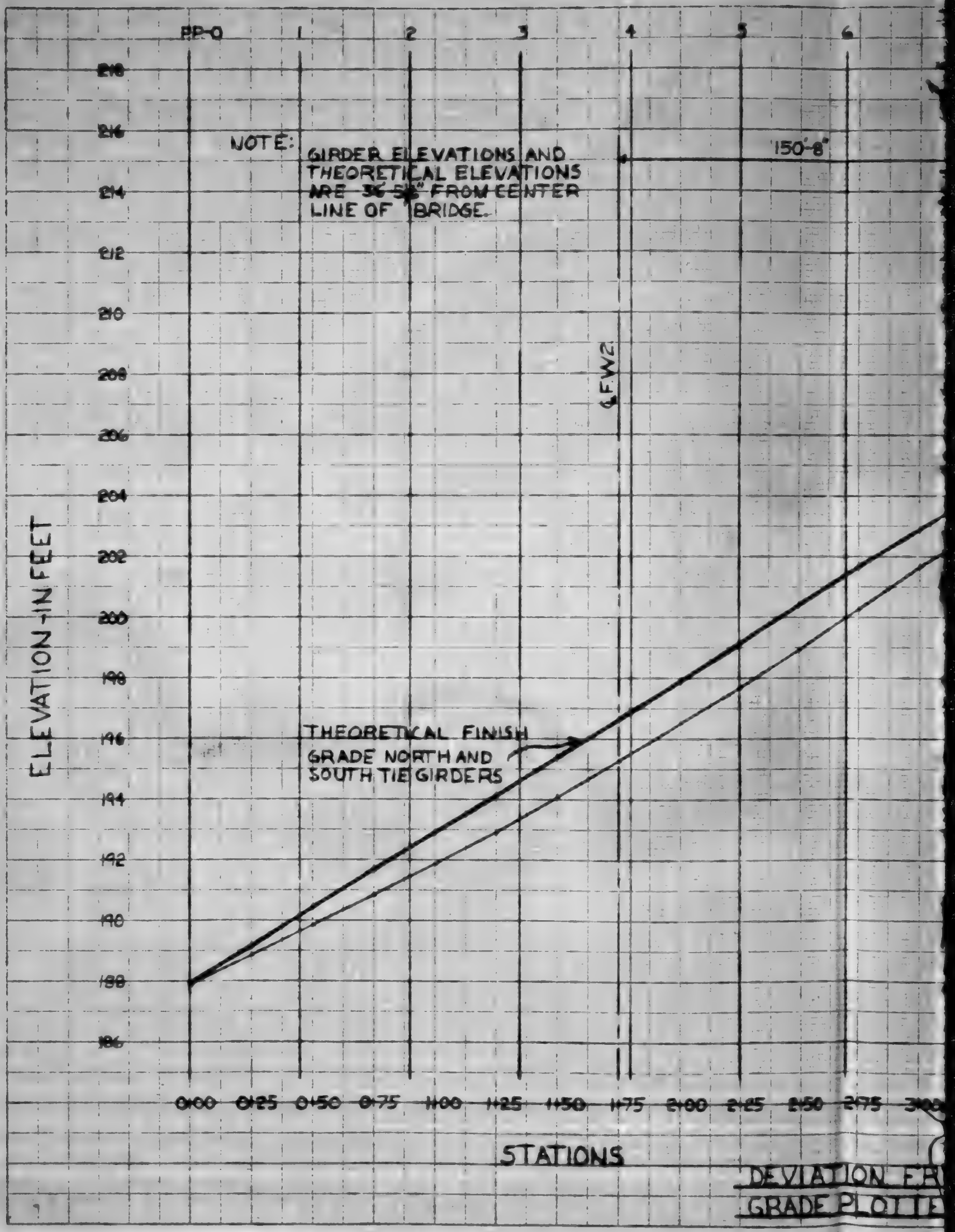
STADIUM FREEWAY
MULTNOMAH COUNTY

WEST SPAN

DATE: 11-23-71 RES. ENG. R.O. CUNNINGHAM
BRIDGE NO. 2529 DRAWN BY: S. SAUNDERS

KEUFFEL & ESSER CO. N. Y.

ENGRAVING 334-3, 10 x 10 TO T-4F HALF INCH
WHEN ORDERED FROM KEUFFEL & ESSER CO. OF NEW YORK
MADE IN U.S.A.



6 7 8 9 10 11 12 13 12-14

125'-0"

EFW1.

ACTUAL GRADE
NORTH AND SOUTH TIE GIRDERS

P.P.-10 AND
STATION 4+50 COINCIDE.

ACTUAL ELEVATIONS SHOT 11-12-71
TEMP. 49°F

5+00 5+25 5+50 5+75 6+00 6+25

50 2+75 3+00 3+25 3+50 3+75 4+00 4+25 4+50 4+75

ATION FROM THEORETICAL FINISH
DE PLOTTED IN ACTUAL ELEVATIONS

OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

FREMONT BRIDGE

STADIUM FREEWAY
MULTNOMAH COUNTY

WEST SPAN

DATE: 11-24-71 RESEVG. R.O. CUNNINGHAM
BRIDGE NO. 2529 DRAWN BY: S. SAUNDERS

+1.40
+1.20
+1.00
+0.80
+0.60
+0.40
+0.20
0.00
-0.20
-0.40
-0.60
-0.80
-1.00
-1.20
-1.40
-1.60
-1.80
-2.00

DEFLECTION IN FEET

P.P.O
1
2
3
4
5
6
7

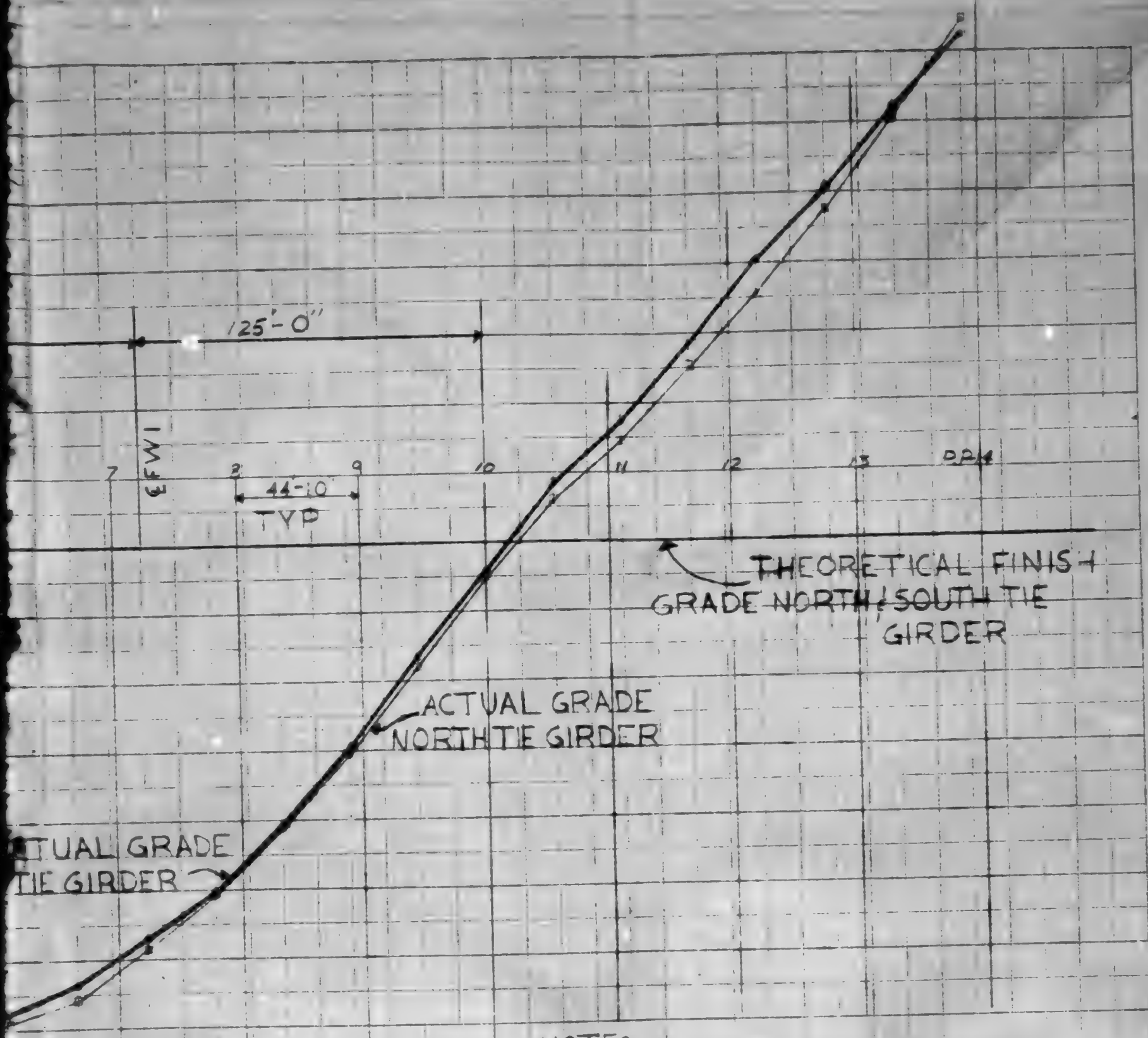
150'-8"

4FW2

CRACK IN SOUTH TIE GIRDER

ACTUAL GR
SOUTH TIE GIRDE

DEVIATION FROM THEORETICAL FIN
NORTH AND SOUTH TIE GIRDE



NOTE:

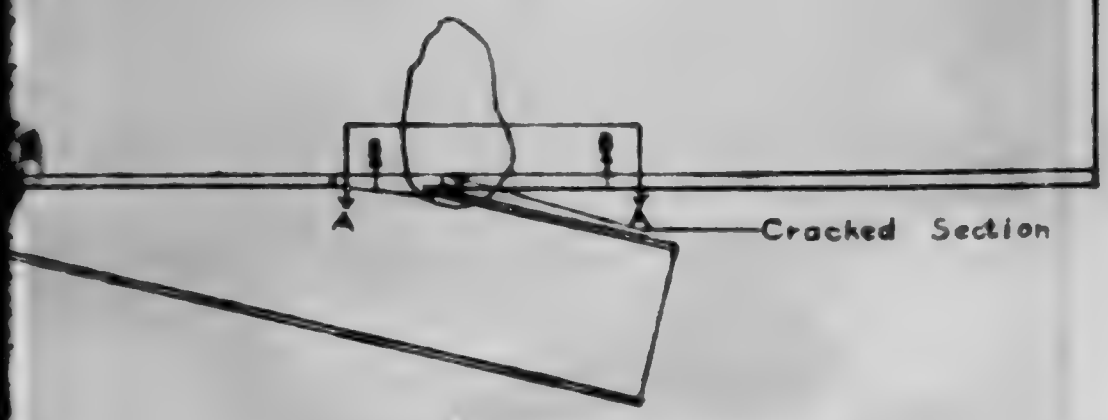
ACTUAL ELEVATIONS SHOT 11-12-71
TEMP ON 11-12-71: 49°F

OREGON STATE HIGHWAY DEPARTMENT ~~BRIDGE DIVISON~~
FREMONT BRIDGE
STADIUM FREEWAY - MULTI COUNTY
WEST SPAN
DATE: 11-17-71 RES. ENG. R.O. CUNNINGHAM
BRIDGE NO. 2529 DRAWN BY S. SAUNDERS

KEUFFEL & ESSER CO. N. Y.

GIRDER 205 GIL

ADER 205 GIL



Cracked Section

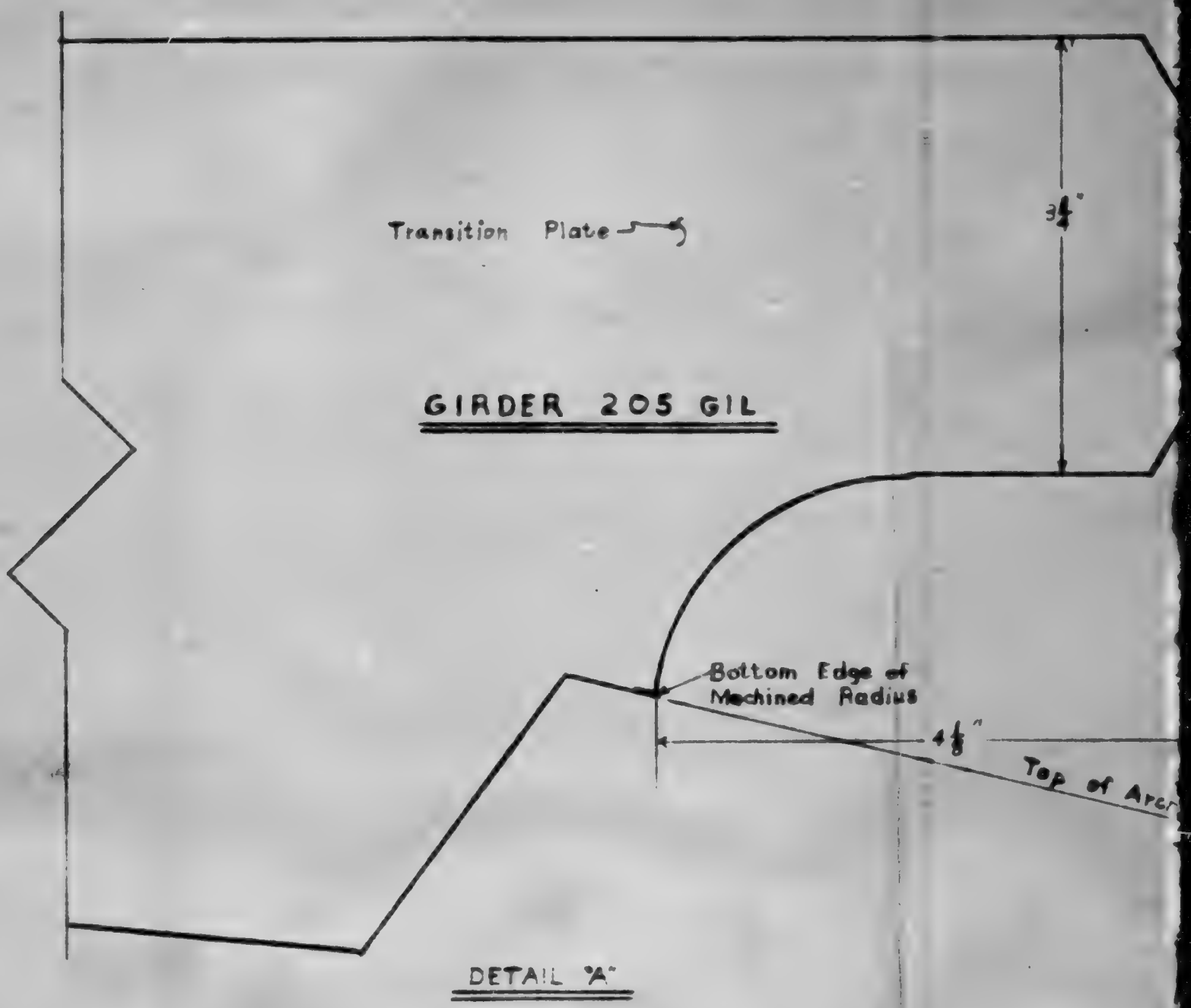
OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

FREMONT BRIDGE

STADIUM FREEWAY
MULTNOMAH COUNTY

GIRDER SECT. 4G SOUTH
WEST SPAN

DATE: NOV. 23, 1971 DES. ENG. R.D. CUNNINGHAM
DRAWING NO. 2529 DRAWN BY W.R. HARLOW

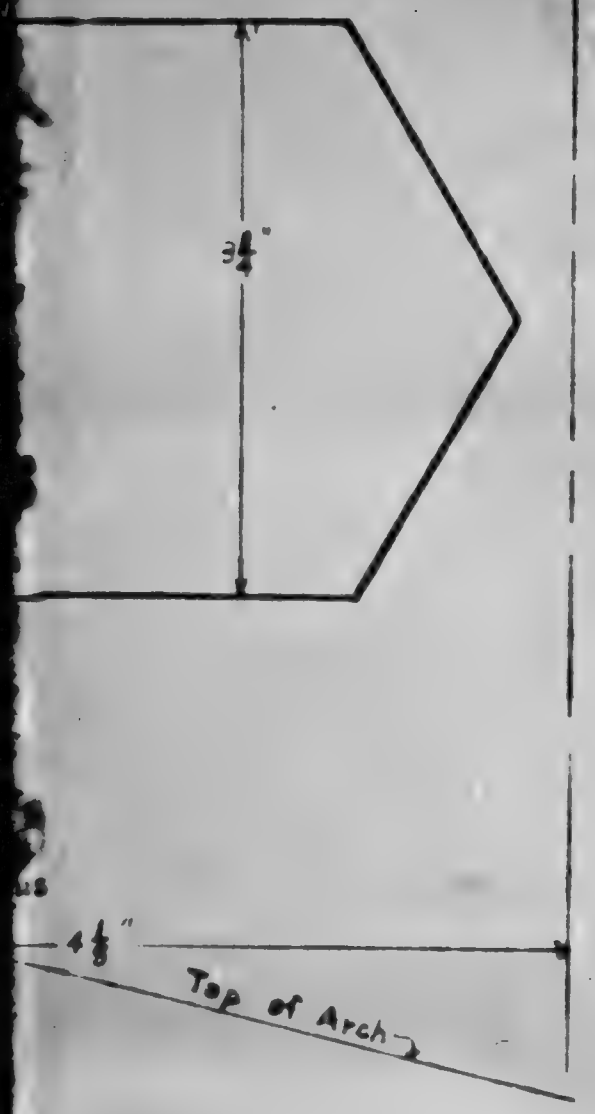


GIRDER 205 GIL

DETAIL "A"

NOTE:

1. Center line of weld established from work done by M.E.T.
2. Possible error due to method used in establishing Base Line ± 1/16"
3. All measurements of crack taken on surfaces of metal.



OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

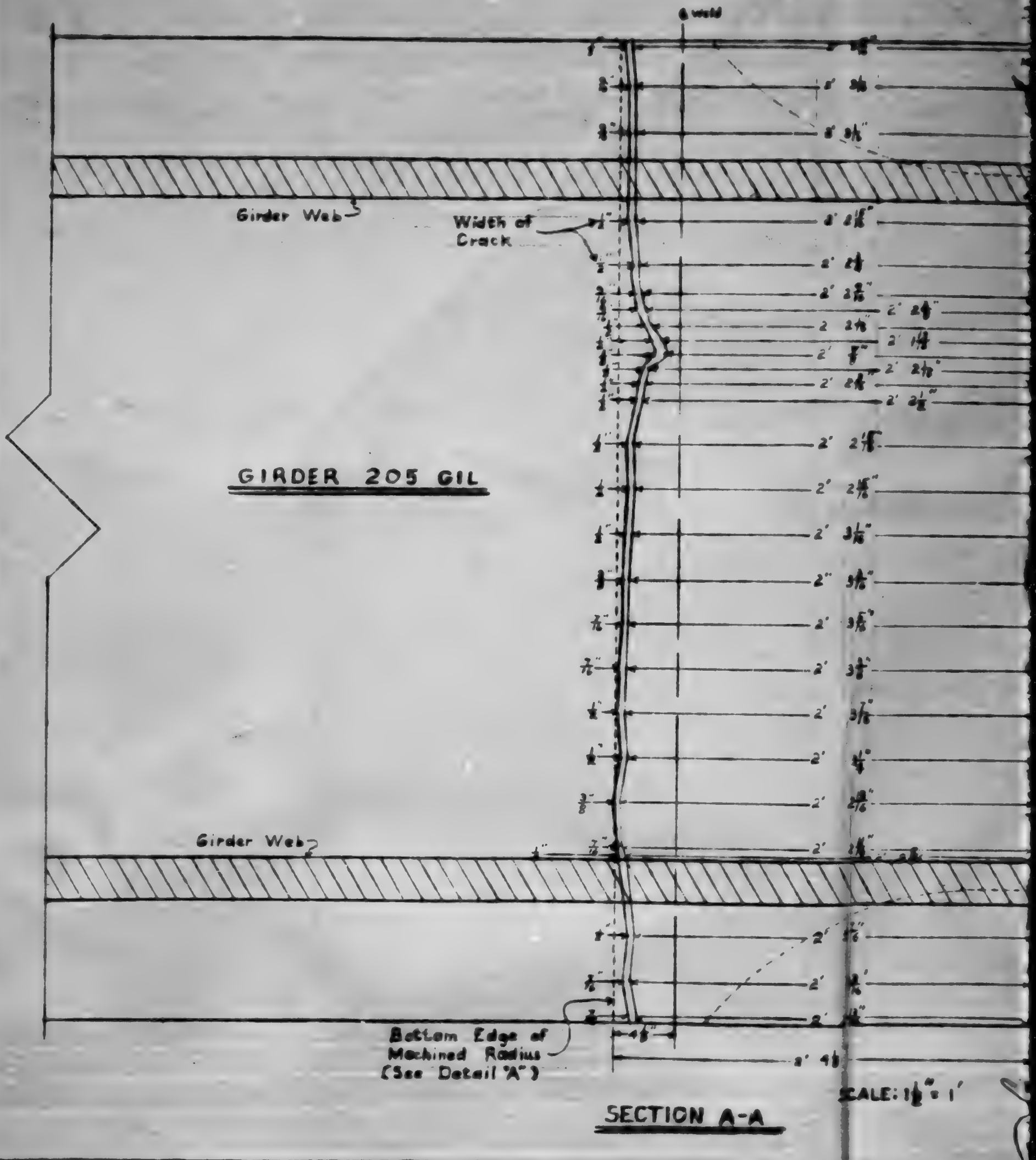
FREMONT BRIDGE

STADIUM FREEWAY

MULTNOMAH COUNTY

DETAIL "A"

DATE: NOV. 23, 1971 REG. ENG.: R.O. CUNNINGHAM
DRAWING NO.: 2528 DRAWN BY: W.R. HARLON



GIRDER 205 GIL

SCALE: 1½" = 1'

SECTION A-A

North Side

0' 3"

0' 6"

1' 0"

1' 3"

1' 6"

1' 9"

2' 0"

2' 3"

2' 6"

Base Line

2' 9"

3' 0"

3' 3"

3' 6"

3' 9"

4' 0"

4' 3"

4' 6"

5' 0"

5' 3"

South Side

SCALE: 1½" = 1'

ARCH

OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

FREMONT BRIDGE

STADIUM FREEWAY
MULTNOMAH COUNTY

BOTTOM FLANGE
TOP VIEW

DATE 1959-63, 1971 DRAWN: R.D. CUNNINGHAM

TRACED 2529 CHECKED BY: W.R. HARLOW

Gap Approximately $\frac{1}{2}$"
Actual Measurement Impractical

Arch Web

GIRDER 205 GIL

Arch Web

Bottom Edge of
Machined Radius
(See Detail "A")

SECTION B-B

Scale $1\frac{1}{2}$" = 1'

South Side

5' 3"
5' 0"
4' 3"
4' 6"
3" 2½"
2 2⅞ 4' 3"
2" 2½"
4' 0"
3' 9"
3' 6"
3' 3"
3' 0"
Base Line
2' 9"
2' 6"
2' 3"
2' 0"
2" 1⅛" 1' 9"
2" 1⅛"
1' 6"
2" 1½"
2" 3⅛" 1' 3"
1' 0"
0' 9"
0' 6"
0' 3"

NOTE:
As viewed from under girder section.

North Side

Scale 1½" = 1'

OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

FREMONT BRIDGE

STADIUM FREEWAY
MULTNOMAH COUNTY

BOTTOM FLANGE
BOTTOM VIEW

date NOV 23 1971 recommended: R.G. CUNNINGHAM
drawn no. 253 B recorded by: W.R. HARLON

Sample #1

Girder Web

Width of Crack

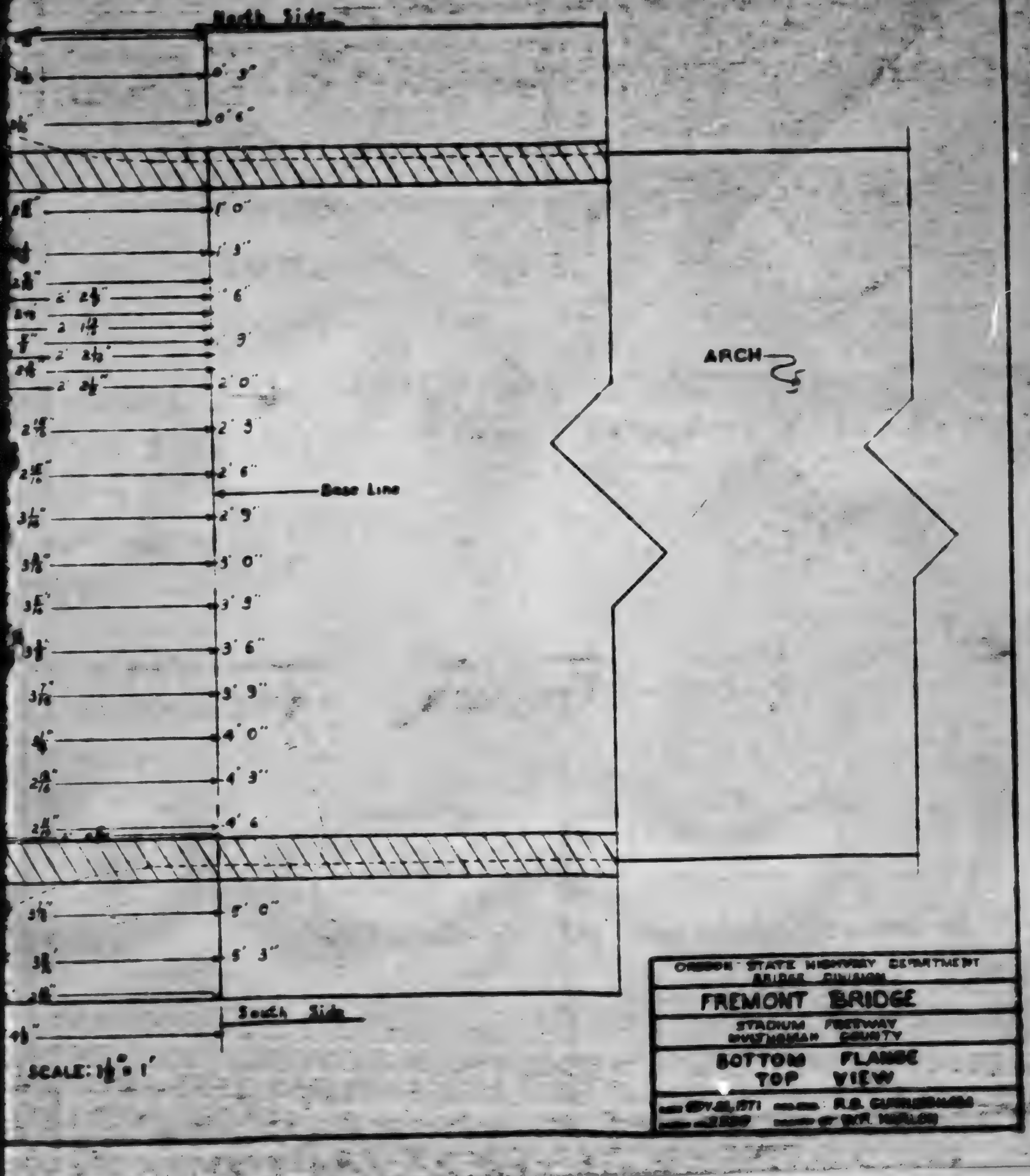
Girder Web

Bottom Edge of Machined Radius (See Detail "A")

Sample #2

SCALE: 1½" = 1'

SECTION A-A


North Side
0' 3"
0' 6"
1' 0"
1' 3"
2' 2½"
6"
2 1¾
3"
2' 2½"
2' 0"
2' 3"
2' 6"
Base Line
2' 9"
3' 0"
3' 3"
3' 6"
3' 9"
4' 0"
4' 3"
4' 6"
5' 0"
5' 3"
South Side
ARCH
SCALE: 1½" = 1'
OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION
FREMONT BRIDGE
STADIUM FREEWAY
MULTNOMAH COUNTY
BOTTOM FLANGE
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Form FHWA-121 (12-67)

UNITED STATES GOVERNMENT

Memorandum

NOV 16 1971
I-405-8(17)
1176

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

Box 300
Salem OR 97308

DATE: November 9, 1971

In reply refer to: 08-35.6

TO : Mr. R. J. Porter, State Highway Engineer
Salem, Oregon
Attention: Mr. A. E. Johnson

FROM for R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Protective Coatings for Steel

Attached are two articles on the protective coating of steel using zinc and other materials. The article by Montle from the Carboline Company indicates that the problems encountered in the Fremont complex are not uncommon to inorganic zinc. The article by Dahlke gives some interesting guidelines on paint system selection. The comments on zinc and epoxy coatings might have some significance for future jobs. I am forwarding three copies for possible distribution to your specification and laboratory people.

Attachments

RECEIVED
NOV 1 2 1971
OFFICE OF
STATE HIGHWAY ENGINEER

11-15-71 cy to Merchant Jenkins Hill Moorhead Hunter Hall Bostwick

NOTED
TOM EDWARDS

AEJ

A.E. Johnson
Chief

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

GPO 910-222

File:
Protective Coatings
(for steel).

Copy sent Schell Oct. 22-71 FHWA-14
JRS.

Unexplained Coatings Phenomena with Some Partially Baked Answers

J. F. MONTLE, *Carboline Co., St. Louis, Mo.*

IN COATINGS formulation and evaluation, certain results have occurred which are reproducible but unexplainable. Some answers have been suggested to explain the cause of these phenomena, but most have not been rigorously proven.

Undercutting

Undercutting is the primary cause of failure of maintenance coatings. Evaluating the rate of undercutting is normally quite straightforward. For example, when a coated test panel is exposed to a sulfuric acid environment, the effects of undercutting are quite visible as the voluminous rust product pries up the film (Figure 1). The corrosion products of steel exposed to sulfuric acid occupy a much greater volume than the original base metal, and undercutting is quite rapid.

In some test exposures, predominantly where salts are involved, there are difficulties in evaluating the rate of undercutting because it is not easily determined by visual means (Figure 2). The rate of undercutting as measured by visual rust formation in these environments is considerably less than the rate of undercutting as measured by carefully checking adhesion in the vicinity of the scribe. Most organic coating systems when exposed to salt fog cabinets will exhibit a steadily increasing loss of adhesion from the scribe if checked with a knife very shortly after removal from the test cabinet. If the panels are allowed to dry and the degree of undercutting then checked with a knife, the coating can usually be removed, but with difficulty, as far back as it could while the coating was fresh from the cabinet. After the distance back from the scribe in which the coating could be readily removed while wet has been reached, the adhesion becomes excellent, and the coating cannot be removed without splitting the primer.

The distance from the scribe where the coating can be removed easily while wet will increase steadily with time. The surface of the panel beneath the coating in this area shows no visible signs of corrosion.

Part of the same phenomenon is the row of blisters frequently observed away from the scribe. This is also more common to salt exposures than any other environment, and more frequently, salt water immersion. A row of blisters appears at a uniform distance from the scribe but not necessarily touching the scribe and thus indicates the maximum distance back from the scribe that the coating can be readily removed with a knife. If the panels are then immersed in salt water for a longer period of time, frequently a second and third row of blisters will appear progressively further away from the scribe.

Although the reason for this difference in adhesion is not understood, it is of enough significance that the two methods of rating undercutting, visual and knife, be used in all grading of test panels in salt exposures.

Anything that weakens the primer or allows it to be subjected to chemical attack obviously will lead to a greater rate of undercutting. The better the surface preparation, the lesser the rate of undercutting. Furthermore, anything which puts a greater stress on the bond will increase the rate of undercutting. Therefore, heavy film thickness, rigid materials frequently undercut more rapidly than thinner film, more flexible materials. It seems logical, then, that additional coats of the same material would cause more rapid undercutting than lesser thickness or number of coats. In many cases, however, this is not true with respect to undercutting. For example, three coats of epoxy coal tar at 8 mils per coat (24 mils total thickness) will undercut far less than two coats of the same system at 16 mils.

One possible explanation is that when corrosion occurs by electrical galvanic action, permeation of ions through the film completes the circuit and causes subfilm corrosion. Therefore, the additional film thickness will reduce the rate of undercutting because there will be a reduced amount of

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Note: This article is a highly condensed version of the original paper. For information on obtaining copies of the complete paper, interested readers should contact the editor of this Journal, NACE, 2400 West Loop South, Houston, Texas 77027.

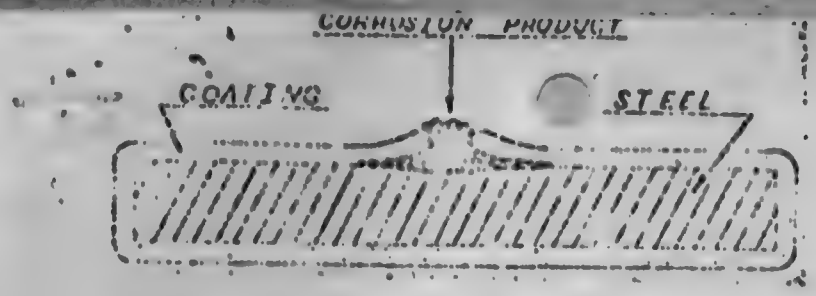

Figure 1 — Undercutting in a sulfuric acid environment.

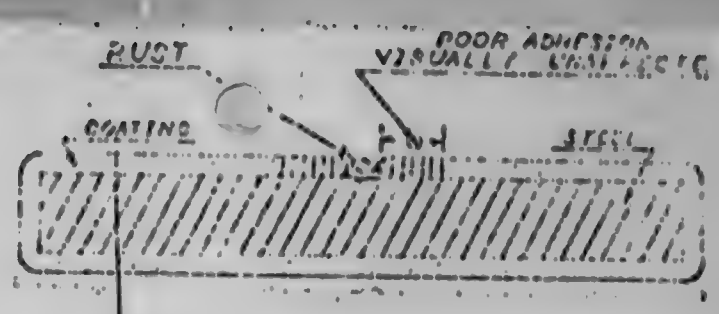

Figure 2 — Undercutting in a salt fog atmosphere.

penetration through the film. This explanation would also explain the row of blisters a finite distance back from the scribe. These blisters would be caused by penetration through the film aggravated by the corrosion at the bare scribe, and this would complete the electrical circuit. While this brief and incomplete explanation might be the answer to the blisters along the scribe and the reduced undercutting with increased film thickness, it does not explain why there is a significant loss of adhesion from the scribe where there is no visible corrosion. It does not explain why the adhesion is poor when the panels are freshly removed from the test exposure and why adhesion is quite good after allowed to dry overnight.

Cold Wall Effect

The greatly increased blistering of linings when subjected to thermal gradient is called the "cold wall" effect. One of the theories that has been presented to explain this effect is that the thermal gradient through the coating creates osmotic pressure and accelerates permeation through the film. In this respect, this failure is thought to be very similar to that initiated by a concentration cell or a surface contamination.

According to another theory, gases from the liquid media diffuse through the coating, condense upon reaching the cold wall, and the larger molecule formed by the liquid water cannot diffuse back to the film as readily. The pressure formed creates the blisters.

The author's work has shown that the effect of thermal gradient is most pronounced when dealing with purer solutions; i.e., penetration of pure water is accelerated more by a thermal gradient than salt water solutions. The rate of acceleration by thermal gradient is relatively independent of coating type. While the author's work has not indicated a better theory to explain this phenomenon, it has verified that the blistering which occurs is due to the degree of thermal difference.

Bubbling of Topcoats

One of the primary reasons for the success of inorganic zinc primers is that the film is open and porous, permitting free passage of the electrolyte to the base surface and providing a high degree of cathodic protection. However, this porous surface can cause some difficulty when the inorganic zinc primers are topcoated. Bubbling of the topcoat frequently occurs and is normally manifest shortly after the coating is applied. The bubbles usually grow rapidly and frequently burst, leaving a crater or void in the coating. The amount of bubbling varies from essentially none to several bubbles per sq inch. The bubbling occurs regardless of the method of application and with all generic types of coatings. Bubbling is worse, however, with coatings which dry rapidly on the surface.

The primary cause of bubbling is air and vapor displacement. When topcoats are applied over an inorganic zinc, the solvents in the vehicle will be absorbed by the porous primer. When this occurs, the air in the voids and porosities in the primer must be displaced. Also, as the liquid volatile solvents begin to evaporate from the porosities in the primer, the volume that they occupy is many times greater. This large volume of gas then creates pressure which forces its way up through the topcoat, forming a blister. If the coating is a film forming material which rapidly forms a skin on the surface, the bubbling will be aggravated. If the coating is one that stays wet for a long period of time, which permits the passage of the volatile solvent and air through the film without forming a blister, the amount of bubbling will be reduced.

With properly formulated topcoats, bubbling is not a great difficulty, but it is interesting to the formulator that the differences between materials which exhibit little or no bubbling and which bubble badly is very slight. Also, bubbling with some coatings will vary tremendously from day to day or from area to area for no known reason. Sometimes, changing to a faster thinner eliminates the problem, but sometimes, a change to a slower solvent works. Neither is there any explanation as to why random bubbling occurs. It appears that the solvents and air that are displaced migrate through the film to some particular void in the inorganic zinc primer, and all of the volatile material is channeled up through this spot, causing a bubble.

Nobody has a complete understanding of why bubbling of topcoats occurs and exactly how to completely eliminate topcoat bubbling. When pinholes do occur in the film of a topcoat, it is primarily an aesthetic problem. Pinholes and voids in the topcoat in normal service are rapidly filled with zinc salt corrosion products and have no noticeable effect on the life of the coating system.

Passivation of the Steel Surface

Inorganic zinc primers protect the steel by the difference in potential between the zinc metal and the steel surface. The potential difference generated is more than sufficient to entirely prevent corrosion of steel in an aqueous environment.

Tests run by the author have shown that protection of the steel can be obtained with no difference in voltage. This has been observed by others and has indicated that the method of protection by inorganic zinc is not due solely to cathodic or galvanic protection. The theory is that cathodic protection lasts only a short time and that the rest of the protection is due to formation of basic zinc compounds which produce a protective film on the steel and fill the pores of the zinc. It is this zinc silicate iron complex which protects the steel from corrosion. The author feels that this is only a partial explanation. It is known that zinc salts rapidly form on the surface of the zinc and are essential in order to keep the zinc from sacrificing too freely. If it were

not for these zinc salts, the service life of inorganic zinc primers would be quite short. There is a certain amount of permeation through this basic zinc salt or zinc compounds that are formed, and there could be sufficient transfer of electrons to in some way passivate the surface of the steel to prevent it from going into solution.

Topcoating Epoxy Coal Tar

Epoxy coal tar coatings cannot be allowed to be exposed to sunlight for any period of time without encountering difficulty in applying topcoats. The problem is due to ultraviolet light. Subjecting epoxy coal tar panels to heat aging or other exposures for various periods of time has always resulted in a surface that can be topcoated with no difficulty. However, exposure to sunlight for even short periods of time will result in a surface to which topcoats cannot be applied without loss of adhesion. Upon exposure to sunlight, some type of chalk layer forms on the epoxy coal tar surface. To successfully apply a topcoat, this weak boundary layer must be removed by mechanical abrasion or by chemical treatment.

The tightly adherent chalk layer formed is not apparent when wiped with a thumb, it is not removed by scrubbing with water and soap or most common solvents. The question is, why does this chalk layer form so rapidly? Is it due to oxidation of the coal tar? It is difficult to remove, yet topcoats split this surface layer readily. Scrubbing with ketone and aromatic solvents will not remove this layer, but when coating systems which contain only these solvents are applied, they can readily be peeled off taking the chalk layer with them.

It has been proposed that the cause is some reaction with a surface catalyst blush. However, the sensitivity to weathering is the same after the first chalk layer has been removed. After removal of the chalk layer, the epoxy coal tar coating must be topcoated promptly. If it is allowed to weather another two or three days, once again the chalk layer will form. The cause remains unexplained.

Topcoat Blistering

Unlike the phenomena discussed previously, one particular type of blistering is not reproducible. It sometimes occurs when inorganic zinc primers are topcoated overall on one side of the panel but only partially on the front side. When the panel is immersed in fresh or salt water, blisters sometimes appear on the back side of the panel directly opposite the spot on the front where there is no topcoat. The delineation can be quite sharp. For example, if there is a 1-inch bare strip on the front side of the panel, a 1-inch strip of blisters down the back of the panel is observed. The only answer that has been proposed is that the hydrogen gas generated by the reaction of the zinc dust with the corrosive media diffuses through the steel and forms blisters on the opposite side of the panel. This, however, seems rather unlikely. Why would the hydrogen diffuse through the steel panel rather than only through the inorganic zinc coating? Also, this phenomenon is puzzling in that it does not occur all of the time even with the same primer and the same topcoat.

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JOHN F. MONTLE research director at Carboline Co., St. Louis, Mo., supervises laboratory research and development activities. He received a BS in chemical engineering from Washington University. An NACE member for 10 years and chairman of Unit Committee T-6B, Montle is also a member of the Society for Paint Technology.

An Illustrated Pocket-Size Handbook

Practical Corrosion Control of Gas Utility Piping

JOHN E. WRIGHT
Gas Service Company
Kansas City, Mo.

180 detailed illustrations showing how to go about controlling corrosion on gas utility piping are the main features of this book. Most situations normally encountered in trouble shooting and repairing leaking mains and service lines, detecting failed anodes, broken wiring, testing insulators, preventing or correcting shorts, and many others are covered with detailed, easy-to-understand drawings. They tell you what to do and what not to do.

Text and pictures give a variety of construction and repair details designed to inform the field crew foreman or supervisor about the proper ways to limit corrosion.

The information came from the practical experience of Mr. Wright and his co-workers. A manual essentially the same as this book is in use by his company in reducing corrosion damage.

A page from the book is shown in miniature at right.

CONTENTS INCLUDE:

- Causes of corrosion
- Examples of corrosion
- Basic corrosion cell
- Soil resistance measurements
- Insulators
- Shorts
- Measuring volts by meter
- Tapes
- Cost of coating and wrapping pipe
- Gas meter insulators
- Insulated unions
- Flange insulators
- Plastic pipe insulators
- Types of bonds
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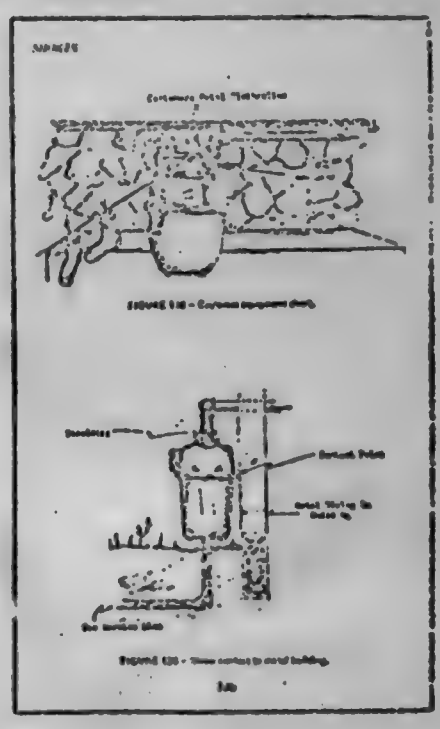
- Handling anodes
- Testing anodes
- Short circuits
- Checkpoints
- Leaks of steel mains
- Ductile iron mains
- Service repairs



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Materials Performance

Zinc Rich Primers: Choice and Selection

C. A. DAHLKE, JR., *Ross Engineering Co., Birmingham, Ala.*

It is generally agreed that protection of steel with coatings is the most effective and economical approach to corrosion control. The most important part of a protective coating is the part in direct contact with the steel, the primer.

Zinc rich primers owe their corrosion resistant properties to the galvanic or sacrificial protection of the zinc dust particles in the primers. Zinc particles are in direct contact with each other and offer a direct electrical connection from the surface of the primer to the steel substrate. Since iron and steel are below zinc in the galvanic series, zinc will corrode in preference to them when in electrical contact in a corrosive environment.

A zinc rich primer is not like the zinc filled primers commonly used for painting galvanized steel. A zinc rich primer has an extremely high percentage of metallic zinc pigments, whereas the galvanized steel primer has a lower metallic zinc content and is mixed with zinc oxide. To qualify for SSPC inorganic zinc rich nomenclature, the metallic zinc dust content of a primer must be at least 75% by weight of the total nonvolatile content. An organic zinc rich primer must contain not less than 85% metallic zinc dust by weight of the total nonvolatile contents.

Zinc rich primers do not lend themselves to accelerated testing. The best method of evaluation is to test them under the conditions of use. Some long term testing in marine atmospheres has indicated that inorganic zinc rich primers have a longer life in those environments. However, similar tests run in areas remote from the sea have shown little or no difference in the life span. Submerged tests in fresh water have indicated a longer life with some organics than with some inorganics.

One of the reasons for the shorter life of some of the organics in early tests was that the zinc content was comparatively low, and the organic resins had a tendency to completely encapsulate the zinc particles, insulating them from the steel. When the particles in direct contact with the steel are used up, the galvanic protection is lost, and corrosion takes over.

Newer organic zinc rich primers with over 85% metallic zinc show good electrical contact with each other. The slight partial insulating effect from electrolytes on the surface of these zinc particles slows down the sacrificial action of the zinc, which can be very beneficial and can lengthen the life of a zinc rich coating and its galvanic protection under conditions conducive to formation of soluble zinc salts. In these cases, any zinc rich primer requires a top coat to protect the zinc.

Inorganic zinc rich primers, completely resistant to most solvents, are ideal without top coats for use as tank linings, where solvents are involved. Inorganic primers normally have better weather resistance, abrasion resistance, and temperature resistance than organic primers.

One of the major advantages of organic zinc rich primer is its ability to accept top coats more rapidly than inorganic zincs. It is impractical to topcoat inorganic zinc rich primed steel in the fabricator's shop because of the cure time required. Most organic zinc rich primers can be topcoated within a few hours and some, such as the phenoxy zinc rich and the vinyl urethane zinc rich primers, in a matter of minutes. These have definite advantages in high-volume fabrication shops and in-plant maintenance painting. Another advantage of the organic zinc rich primers is the ability to adhere better to a "less-than-perfectly" prepared surface, eliminating the requirement of a tie coat between the primer and top coat.

Selection of a Zinc Rich Primer

One of the most important considerations in primer selection is the complete coating system. If no top coat will be used, an inorganic zinc may be preferred. If a solvent based top coat is to be applied, an organic zinc rich primer

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Note: This is a highly condensed version of the original paper. For information on obtaining copies of the complete paper, interested readers should contact the editor of this journal, NACE, 2400 West

Another important consideration is when the top coat will be applied. If the primer is to be topcoated immediately, cure times become a major item.

Environmental conditions at the time and place of application are an important consideration. Water is necessary to complete the curing reaction of inorganic zinc rich primers. At temperatures below 7 C (45 F) and/or humidities below 50%, the curing rate of most inorganic primers is seriously retarded. Low humidity generally favors application of the organic types, and temperature below 7 C (45 F) begins to limit selection to a product such as the organic zinc rich phenoxy primer.

The environment in which the coating system will be located will have an effect on primer selection, even if two or three top coats are to be used. Some environments would be better protected with some type of primer other than zinc rich. For example, a highly caustic area subjected to splash or spillage of caustic material and mechanical damage would be far better off with a rust inhibiting epoxy primer. If mechanical damage in this area should occur to the zinc primer, the primer would be attacked and actually undercut the top coating.

Consideration should also be given to the applicator. Special techniques and training are required in application of zinc rich primers. This training is usually available from the supplier.

The manufacturer's experience with the zinc rich coating specified must be weighed. His ability to offer service, especially to the applicator, also is important. The manufacturer should be willing to guarantee the protective ability of the zinc rich primer and offer the service to back it up.

Economic Considerations

Zinc rich primers are relatively expensive when comparing costs, however, price per gallon can be deceptive. A low cost paint would probably have no more than 35% solids by volume. Either it does not go very far, or it is too thin to offer ample protection with one coat. Furthermore, an inexpensive primer often is applied over steel with little or no surface preparation. When the mill scale pops off, so does the primer. Properly top coated with two coats of low cost alkyd paints, this system will have a life expectancy of 3 to 5 years in a noncorrosive atmosphere. In a pulp and paper mill, the life expectancy of the coating, about 4 to 5 dry mils thick, is closer to 1 year, with failure starting in 6 months or less in severe areas.

With normal maintenance, the zinc rich primer system with two coats of epoxy offers about 10 dry mils thickness. It can be expected to be in good shape after 5 years. The primer should offer galvanic protection for 10 years and in some cases, up to 20 years.

Total cost/sq ft of the older system, based on *1969* prices, is about $0.39/sq ft. Based on *1971* prices, total cost of the zinc rich system is approximately $0.44/sq ft.

Specifications for protective coatings must be clearly written with no room for doubt, especially where zinc rich primers and "exotic" top coats are to be applied. The exact generic type of primer, the minimum surface preparation, and the minimum dry mill thickness should be specified. Minimum standards should be established and adequate inspection maintained.

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CLARENCE A. DAHLKE, JR. is a staff engineer with the Rust Engineering Co., Birmingham, Ala. A graduate of the Indiana Institute of Technology, Dahlke has a BS in chemical engineering. He is a member of the NACE and TAPPI.

CORROSION//72

RECEIVED
NOV 10 1971

I-405-8(17)303
72-76

November 9, 1971

Mr. R. E. Simpson, Division Engineer
Federal Highway Administration
Post Office Box 300
Salem, OR 97308

Dear Sir:

Re: Fremont Bridge Superstructure
Fracture of Tie Girder
Panel Point 3

We are in receipt of an inspection report dated October 29, 1971, prepared by H. A. Schell of your office concerning the fracture on October 28, 1971, of the south tie girder at Panel Point 3 of the west back span.

In order that you may be aware of our activities and those of the contractor since that time, following is a summary of occurrences since the failure.

On Friday, October 29, Messrs. Schell, Tokerud, and Christiansen of the FHWA, representatives of the Highway Division, and contractor personnel, including their consultant, Earl and Wright, visited the project and inspected the cracked beam. No action was taken at that time nor conclusions reached.

On Monday, November 1, Mr. Harry Cayzewski, Metallurgical Engineers, Inc., was contacted by our Metropolitan Region and asked to submit a proposal for a study of the metal in the fracture areas. This would include cutting coupons in the fracture areas, testing, and studying. At this time, the Highway Division's consultant, Parsons, Brinckerhoff, Quade & Douglas, was requested to consult with Earl and Wright, the contractor's erection consultants, regarding erection stresses.

On November 2, Murphy Pacific was advised to furnish scaffolding for use by Metallurgical Engineers, Inc. and to obtain additional falsework material for a falsework No. 2 tower on the east side in order to leave falsework No. 2 west side in place.

At this time, it was also suggested that a completely independent recheck of the erection procedure, erection stresses, falsework reactions and elevations be secured and that the independent checking firm should be mutually retained by both parties. The contractor was also advised that the erection of the East Bank span and the main span should continue as originally planned; and that the method of correction of the failed member had not been determined at that time nor would it be determined until the cause of the failure was pinpointed.

On November 3, Mr. Jay Murphy advised me that the bonding company's attorneys were retaining an independent consultant to check design and erection procedure stresses and that the results would be privileged information. I therefore contacted Howard, Needles, Tammen and Bergendoff with a view of retaining them to do the same study for the Highway Division.

On November 4, contact was made by Highway Division personnel with both Harry Czyzewski of MEI and E. B. Johnson of Howard, Needles, Tammen and Bergendoff relative to studies by both firms. It was agreed that we would ask HNT & B to check procedures as they apply to the west back span, including an analysis and evaluation of all erection steps and stresses up to the point of beam fracture, and then include the remaining step or steps necessary for the complete back span erection. They would also then check and evaluate the erection procedures and stresses and strains of the back spans during the placement of the 900-foot center span. The final step would be to check and evaluate the stresses of the completed structure for all conditions of loading. Mr. Czyzewski was advised that we did want him to examine the fractured beam, including laboratory tests of samples taken and to do nondestructive testing on the north tie girder to determine if possible the condition of that metal.

Both MEI and HNT & B are to submit written proposals in the near future and both of these will be forwarded to you for your examination and a request will be made for approval for participation.

On November 5, I advised Murphy Pacific that the fractured pieces in the south tie girder are to be removed and replaced.

On November 5, I also advised Murphy Pacific that the elevation of falsework No. 2 on the East Bank span shall not proceed beyond the step shown on the third line from the bottom of drawing 69500-ST-5 as shown in the erection details prepared by Earl and Wright until the cause of the failure at Panel Point 3 on the west back span has been determined.

On November 5, a copy of a letter dated November 3 was received from Murphy Pacific addressed to R. O. Cunningham, Resident Engineer, stating that they are of the opinion that work and materials required to rectify the situation will entitle them to additional compensation on the grounds that under the contract they are not responsible for the failure or for the extra expenses which will result. They also advise that they have set up procedures to permit strict accounting of the actual costs of solving the problem presented by the failure.

On November 8, I wrote Murphy Pacific that until the cause of the failure had been determined, we could not agree that the work should be done on an extra work basis.

At the present time, falsework is being fabricated in Portland by Murphy Pacific and when completed will be installed so that a metallurgical examination may be made. Information received from our two consultants concerning conditions and stresses at the time of failure will be furnished to you.

Very truly yours,

R. L. Porter
State Highway Engineer

By

Tom Edwards
Deputy State Highway Engineer

cc R. L. Porter
A. E. Johnson
I. D. Marchant
R. L. Schroeder
R. O. Cunningham
L. I. Lindas

AEJ:vm

FORM B-2½ 1500 10-69 . BP-23401.736

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon
November 2, 1971

To: Memo to the Files

SUBJECT: Fremont Bridge Superstructure
Stadium Freeway
Contract No. 7276
Bridge No. 2529

On Thursday Oct. 28, 1971 at 11:00 AM the tie girder cracked near P.P. 3.

After inspecting the structure I told Bill Choate that the jacks should be put back under the arch rib. He later informed me that they had to jack up about 3½ inches to put the jacks in place.

On Friday Oct. 29 the following people were on the project

Mr Tokerude	FHWA
Mr Schell	"
Mr Christinson	"
Mr Merchant	OSHD
Mr Schroeder	"
Mr Jenkins	"
Mr Chidsey	"
Mr Rief	"
Mr Hart	"
Mr Hardt	"
Mr Silano	PBQD
Mr Abrams	"
Mr Dias	Murphy Pacific
Mr Spirz	"
Mr Riffell	"
Mr Choate	"
Mr Geer	"
Mr Wright	Earl & Wright
Me Leber	"

There was no official meeting between the State and the Contractor.

To my knowledge the State gave no official directions to the Contractor.

State personnel checked the cracked girder on Oct. 30 & 31 and found no change in the conditions.

NOTED
IVAN D. MERCHANT

NOTED
A. E. JOHNSON

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NOV 2 1971
BRIDGE DIVISION

2 enclosed Pg.

Nov. 1, 1971 I phoned Bill Choate and ask him to install lights in the girder. I also ask him to put a scaffolding around the cracked section so we could get to the outside. I told him we would keep track of the labor and materials but I did not know who was paying the cost.

At about 4:20 PM Choate advised me that he had been relieved of any official capacity as far as the west end of the bridge is concerned and that all contact from now on will have to be through Jack Geer.

As of this time there has been no official contact with job site representatives of the Contractor. They have been given no direction by this office except those noted . Unofficialy they have been told that we are hiring a consultant metallurgical engineer.

R.O. Cunningham
Resident Bridge Engineer

ROC:dh

cc: I.D. Merchant
R.L. Schroeder

RECEIVED
NOV 2 1971
BRIDGE DIVISION

Nov. 1, 1971 I phoned Bill Choate and ask him to install lights in the girder. I also ask him to put a scaffolding around the cracked section so we could get to the outside. I told him we would keep track of the labor and materials but I did not know who was paying the cost.

At about 4:20 PM Choate advised me that he had been relieved of any official capacity as far as the west end of the bridge is concerned and that all contact from now on will have to be through Jack Geer.

As of this time there has been no official contact with job site representatives of the Contractor. They have been given no direction by this office except those noted . Unofficialy they have been told that we are hiring a consultant metallurgical engineer.

R.O. Cunningham
Resident Bridge Engineer

ROC:dh

cc: I.D. Merchant
R.L. Schroeder

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NOV 2 1971
BRIDGE DIVISION

Files

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

November 2, 1971

#2045-X102

Mr. Ivan D. Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge

Dear Sir:

We are enclosing herewith a copy of Drawing SK-2, revised 11-1-71, covering details of corrective measures to be applied to the East Approach tie-girders.

As per your suggestion, we contacted the office of W. J. Wilkes, Chief, Bridge Division of the Federal Highway Administration and spoke with Mr. Frank Sears concerning the comments outlined in their letter to Mr. Ralph M. Phillips (Regional Federal Highway Administration) dated July 14, 1971.

We believe we have resolved the questions posed by their comments and the corrective work on the East Approach tie-girders may now proceed.

We are now working on corrective measures to the East Approach tie-girders which will follow shortly.

NOTED
TOM EDWARDS

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NOV 4 1971
Resident Bridge Engineer

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

NOTED
A. E. JOHNSON

L. G. Silano
Project Engineer

P.S. We anticipate receiving shop drawings on the above for our review.

SS/ms

MR. EDWARDS X

Encl. [redacted]

cc: Murphy Pacific, Attn: Mr. Jack Goer (w/reprod. print)
R. V. Cunningham (w/print)
R. L. Schroeder
Pittsburgh Testing Laboratories (w/print)
W. J. Wilkes (w/print)

File

FORM S-59 (REV. 10-60)

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
November 1, 1971

SUBJECT:

NOTED
A. E. JOHNSON

To:

Mr. I. D. Merchant
Bridge Engineer

Crack in 205 GIL B1
Fremont Br. Superstructure
Contract 7276

The undersigned inspected a large crack in the bottom flange of Fremont Bridge superstructure member 205 GIL. This crack lies in and adjacent to the splice identified as B1 in Materials & Research Section ultrasonic reports dated July 15, 1971, and photographs dated July 17, 1971. The crack extends the full width of the 3¼" thick bottom flange, up the south web to the top of the heavy section, 2' above the upper surface of the flange, and up the north web to the horizontal butt splice at which the A588 web plate attaches to the A36 web plate, some 72" above the top surface of the bottom flange.

As I understand it, talking to Mr. Gerald Dalrymple, OSHD inspector on duty when the jacking operations were in progress, Murphy Pacific steelworkers were reducing the support force under the tie girders when the crack suddenly occurred about noon on October 28. This operation consisted of first lowering the jack under the north girder 2", then lowering the jack under the south girder 2", etc. alternating from one to the other. It is not known whether the south girder which failed was 2" lower than the north girder at the time of failure. After failure, the jacks were raised to again pick up some 160 tons of load.

The crack was inspected in detail from within the tie girder on the afternoon of October 29. The attached sketch, Figure 1, shows the alignment of the crack as we determined it. It appears that, in general, the crack passes through the lower edge of the butt weld attaching the 3¼" A588 plate to the A588 machined transition block and thence vertically through the parent metal of the transition block. Between stations 6 and 7 (radiograph location points) the crack angles into all-weld metal and returns to parent metal. The metal grain structure between 6 and 7 in entirely different then that visible elsewhere in the crack. Between 6 and 7 the grain structure is quite uniform. Elsewhere the structure is fibrous, like split wood or a wrought iron nick-bend break. Fragments of metal, like waves,

GPO 838798-736

were pulled from the sides of the crack as the east side moved north and down with respect to the west side.

Nine apparent weld discontinuities were identified during the examination. These were all near the bottom surface of the flange, apparently under one of the last layers of weld metal. Most of these discontinuities I would judge to be lack of fusion. They exhibited black to dark brown surfaces, smooth and convex when viewed from what would be the underside of the bead as placed. (See Figure 2 and Photo No. 1) Two of the discontinuities were brown in color and might be slag.

Photographs 1 and 2 were taken on July 17 when GIL was still on the "Marine Boss." The estimated location of the crack is shown on these photos in red. As of this date the outboard flanges have not been examined closely or etched to precisely determine the location of the crack with respect to the weld.

It should be remembered that, for economic reasons, Murphy Pacific machined the transition blocks from 6" UM plates 34" wide and 66" long. The grain structure would be aligned at 90° to the direction of the tensile forces acting in the bottom flange.

An unusual feature of the break was the apparent total lack of yielding or necking down in the vicinity of the break in A588 steel. An 8" diameter area of popped-off inorganic zinc paint marks the spot where the crack terminates in A36 steel in the north web. The A36 steel obviously yielded extensively and the brittle zinc primer could not follow suit. However, adjacent to the open crack in A588 steel the inorganic zinc is missing for not more than 1/8 ". The break is nearly normal to the surface of the plates and reduction in thickness would not be detectable without a micrometer.

Based on present knowledge in my opinion there were three contributing factors to the failure of the bottom flange of GIL at the B1 joint:

1. GIL had probably been lowered 2" more than GIR, shifting a disproportionate share of the stress to this member.
2. Discontinuities in the weld near the most highly stressed bottom surface caused stress concentration across the width of the weld.
3. The transverse grain structure in the transition block causes it to have less strength than anticipated by design in the direction of the applied tensile forces.

Failure was abrupt and progressive, beginning in the vicinity of the north edge of the flange. The abruptness of the failure caused loading similar to impact, hence the nonductile fracture. It should also be remembered that early morning temperatures had been below freezing and the steel was

probly below 40F at the time of failure, further reducing its impact strength.

I recommend that a qualified metallurgical engineer be called in to evaluate the forces being brought to bear at this splice, and the reasons for the inability of the metal to withstand them. Mr. Harry Czyzewski of Metallurgical Engineers, Inc. or Prof. O. G. Paasche of Oregon State University are believed qualified.

John C. Jenkins
Engineer of Materials & Research

cc: A, E. Johnson
R. L. Schroeder
R. O. Cunningham
E. J. Rief

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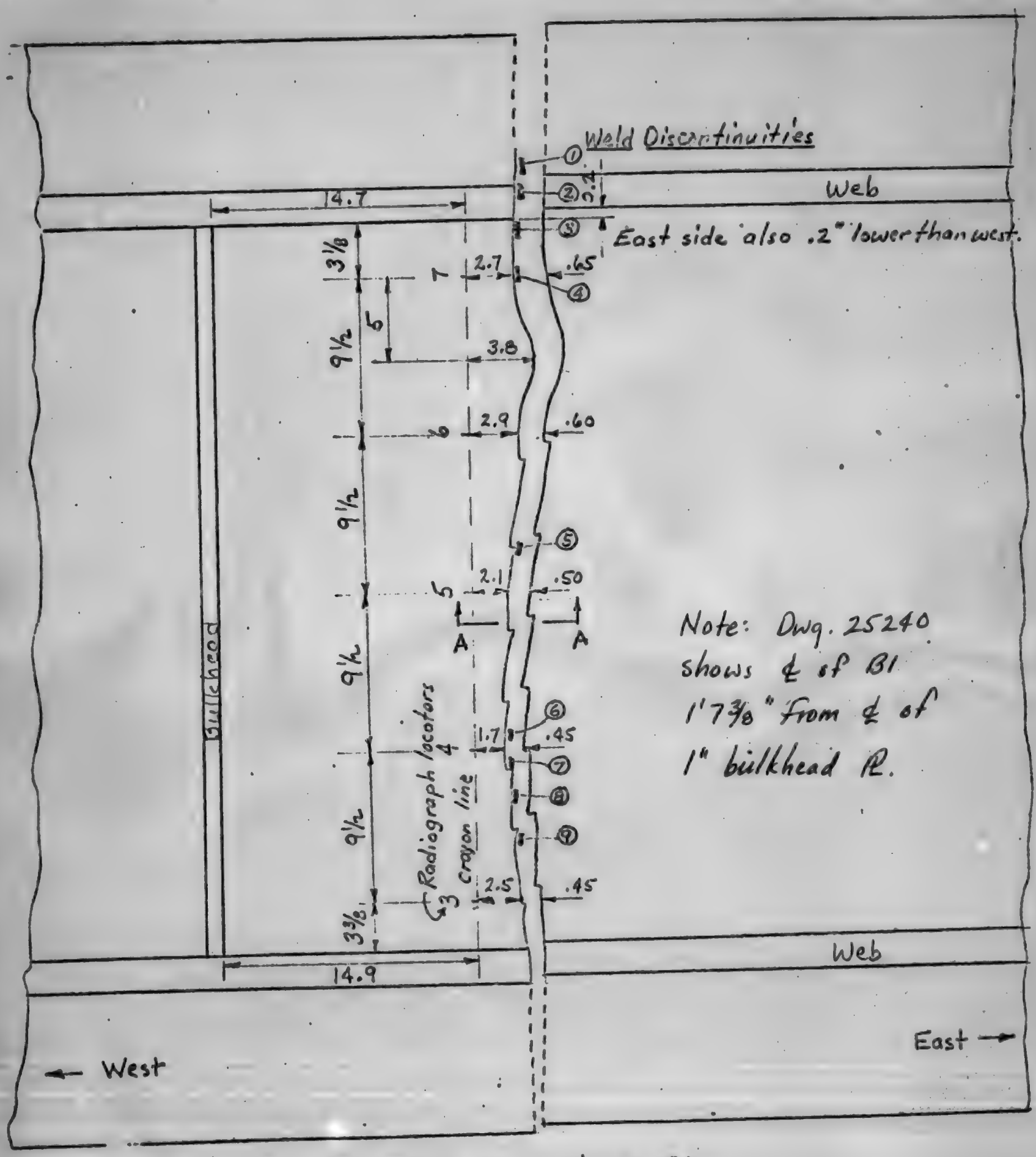
NOV 2 1971
OFFICE OF
STATE HIGHWAY ENGINEER

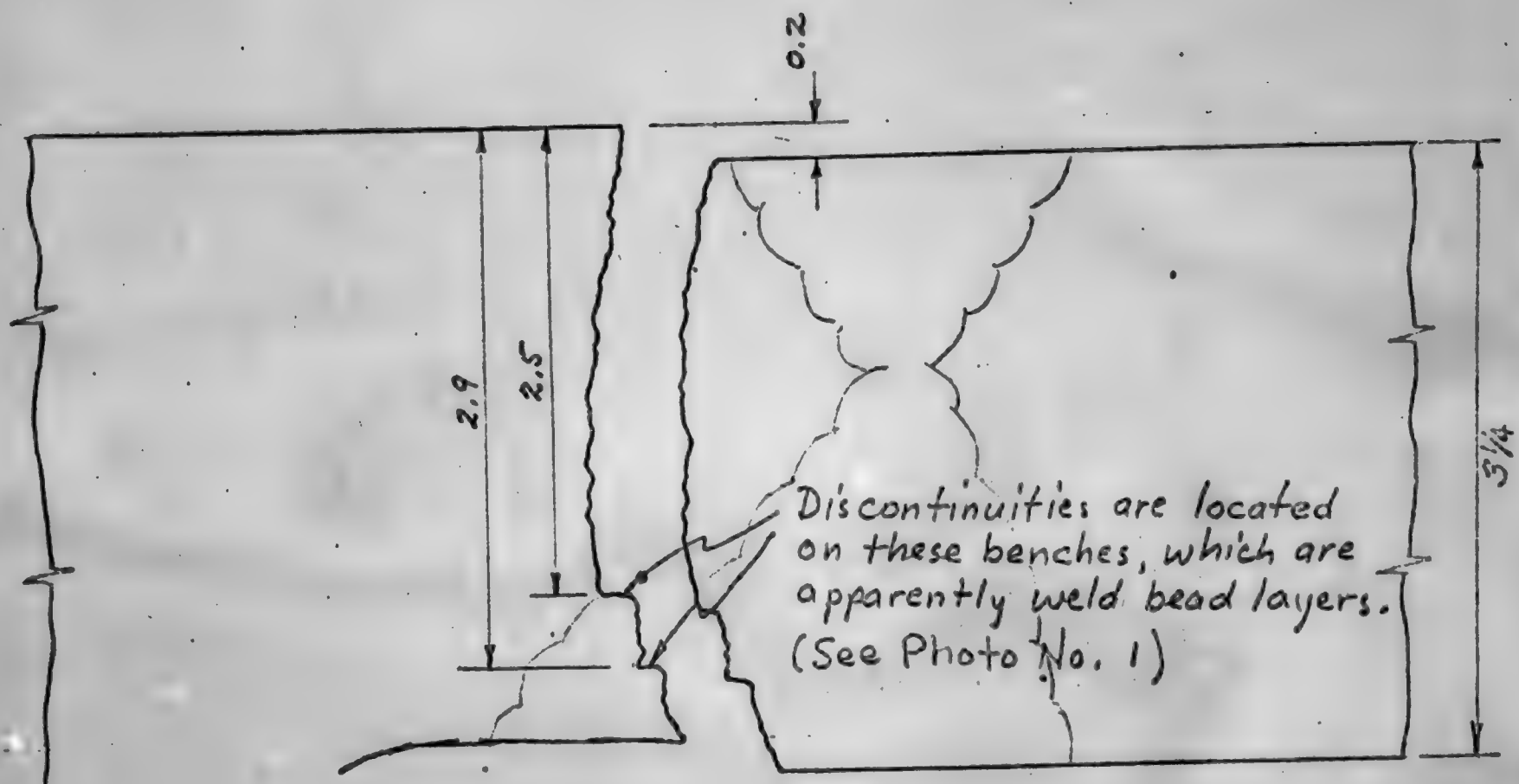
Contract 7276
Oct. 29, 1971
JCJ



Plan View Joint B1
205 GIL

Fig. 1

Contract 7276
Oct. 29, 1971
JCJ



Section A-A

205 GIL BI

Fig. 2

Fremont Superstructure
Gil 205 Joint B1
Photo No. 1 taken 7/17/71 shows south end of B1 etched to outline weld. Machined A588 transition block to left. Red line shows assumed location of crack, based on preliminary inspection on 10/29/71.

Framont Superstructure
GIL 205 Joint B1
Photo No. 2 taken 7/17/71 shows north end of B1 etched to outline weld. Machined A588 transition block to the right. Red line shows assumed location of crack, based on preliminary investigation on 10/29/71. Note arrow pointing to what appeared to be a crack, though none was found ultrasonically in July. Failure apparently originated in this edge of plate.

JCJ

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cy to IDM
AEJ
11-9-71

FORM PR-338
(REV. 3-68)

OSHD
Region
Wash DC
Christianson, Area Engr

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

CONSTRUCTION INSPECTION REPORT

(PPM 20-6.1)

(Check appropriate box) ☐ Contact ☐ Project Stage Inspection ☐ Final Inspection

Region No. 8	Report No.	County Multnomah	Division Oregon
Date of Inspection 10-29-71	Inspection Made By E. A. Schall, Division Bridge Engineer		Project No. I-405-8(17)303
In Company With See Below			
Quality of Work* Satisfactory - See Below	Progress of Work Unsatisfactory	Time Elapsed 96 %	Work Completed 37 %

Report to Include: (1) Scope of Inspection (2) Summary of Findings, Recommendations, and Action Taken.

(*Not applicable for all Contracts.)

NOTED
A. E. JOHNSON

FREMONT BRIDGE SUPERSTRUCTURE
Fracture of Fremont Tie Girder - Panel Point 3

This is an inspection report on the fracture of the Fremont Bridge tie girder at Panel Point 3 during the final erection of the side span. The fracture occurred October 28 at approximately 11 a.m. The crack is in the bottom flange of the tie girder just west of the reentrance corner of the stress relieved A588 flange connection to the arch rib. The base of the crack is about 1/2" wide (see photos) and follows up the south web of the A588 steel plate 2'. On the north web the crack goes through the A588 steel to the A36 material located approximately 6 feet above the flange. It appears that part of the crack goes into the heat affected zone of the butt spliced weld across the milled plate. The crack appears to be a "tearing" like crack with no obvious "necking" down in the A588 steel.

The contractor had completed the bolting of the orthotropic deck panels 12 and 13 and had dropped his jacks 15" (lowering from 151.3 to 150.0) to start the Panel 9 bolting. Falsework was removed except between Panel Points 4 and 5 (falsework Bent No. 2 contractor's general erection plans). The break was sudden, creating some panic with the ironworkers, and involved only the south truss. The north truss lowering was about 1/4" behind the south and exhibited no apparent distress (see photo).

The contractor then jacked up the falsework bent 3 inches through the tie girder (total drop of original section 12") placing approximately 170 tons on each of the 4 jacks. Jacks were "snubbed up" under the arch and the north truss was again supported in a similar fashion.

Checking the fracture during this inspection were:

OSHD - Merchant, Hart, Hardt, Cunningham, Reif, Chidsey, Jenkins, Schroeder
FHWA - Schall, Tokarud, Christianson

(more)

NOTED
TOM EDWARDS

REPLACES PR 33A 3-65, WHICH WILL NOT BE USED.

The procedure for approaching this problem was discussed with Messrs. Merchant and Hart. This was outlined as follows:

1. Employ a recognized metallurgist to study the metal fracture
2. Cut several coupons in the fractured area for testing and study
3. Obtain a similar piece of A588 steel with a known direction of rolling and tension break it in both directions

The State agrees that this is probably the way to start. Harry Gayszewski of Metallurgical Engineers Inc. will be retained by the State for this purpose. The State will make some initial checks on the erection procedures to see if there is an indication of overstressing. The consultant, PBQ & D, has been requested to confer with Earl and Wright, the contractor's erection consultant, to determine if there was an erection overstress.

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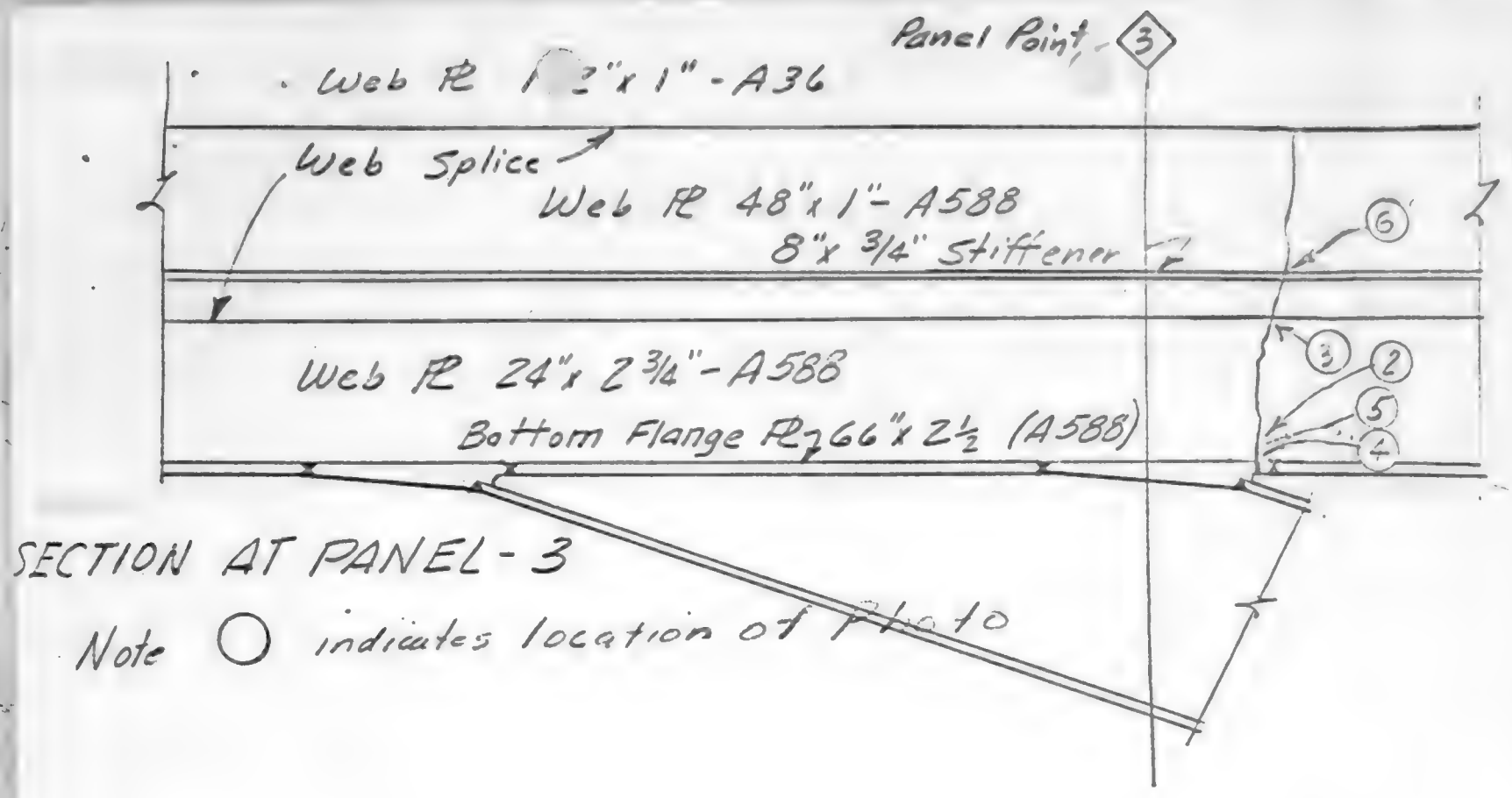


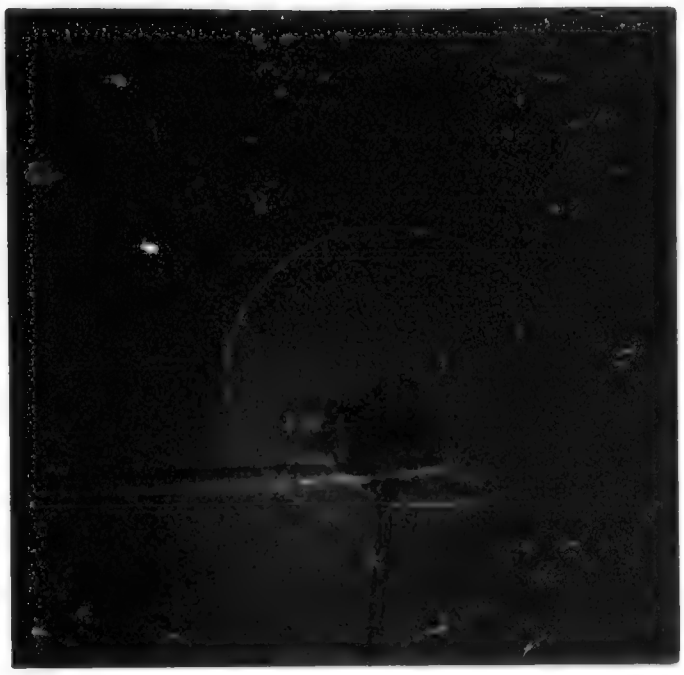
SECTION AT PANEL - 3

Note ○ indicates location of Photo

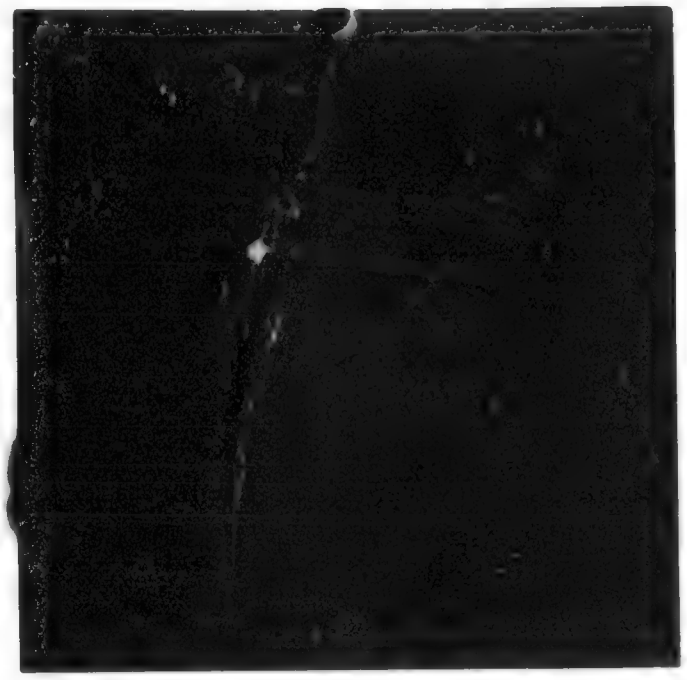
Looking vertically down the south edge of the tie girder - note crack in flange

Looking at the flange to web connection on the south inside section of the girder

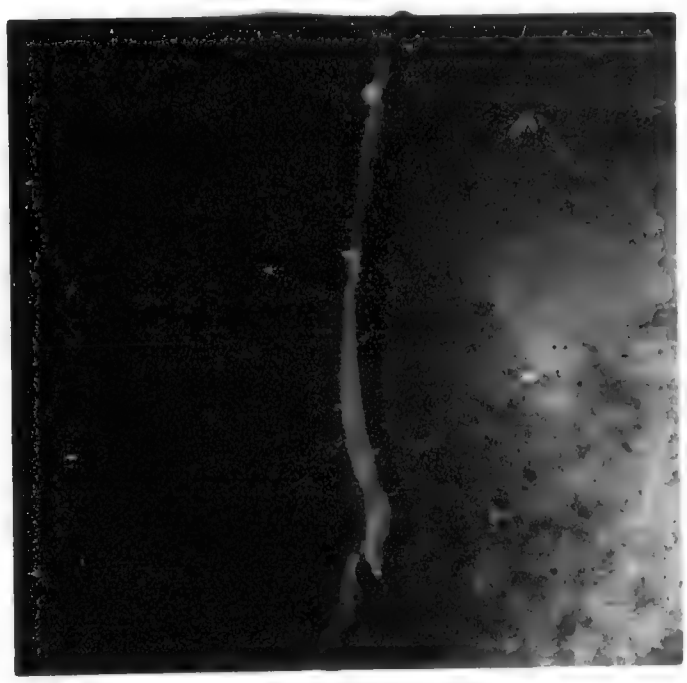
10-29-71



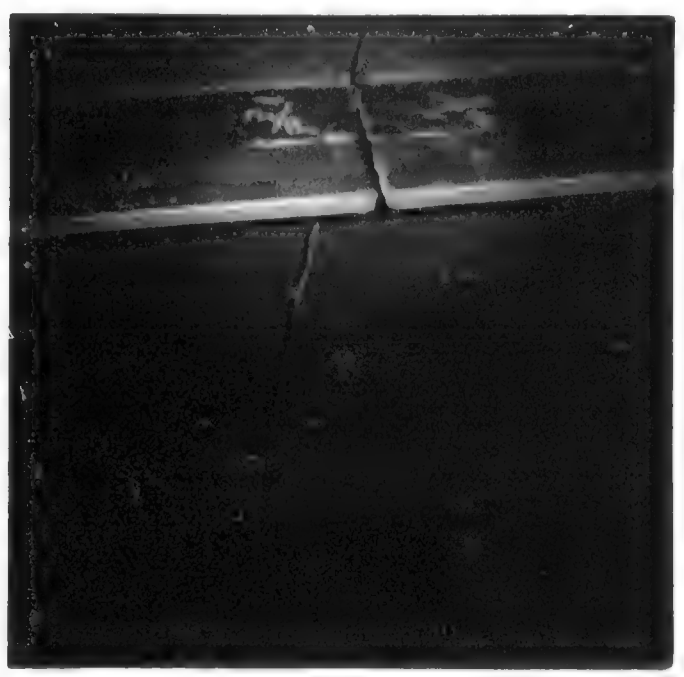
The extent of the crack on the south web



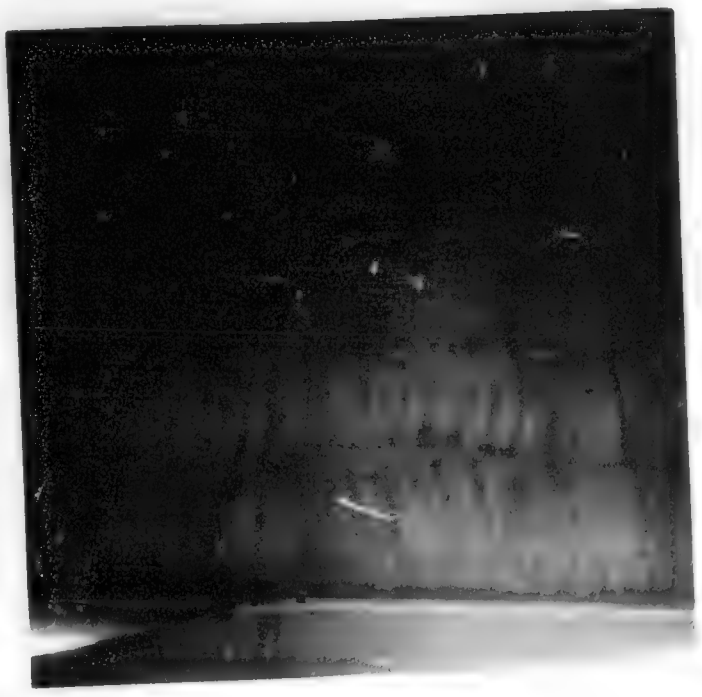
Looking at the flange to web connection on the north inside section of the girder



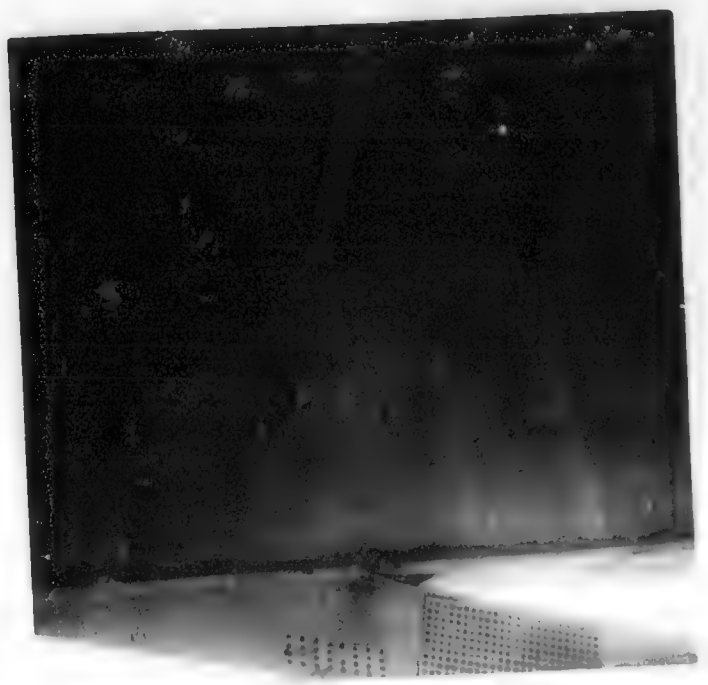
A closer look at the north inside section of the girder



A view of the north web and longitudinal stiffner



The appearance of the crack on the north outside section of the tie girder



A view of the north arch connection to the tie girder. There is no apparent distress

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FORM 8 W 20M 10-68 SP°23401.734

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7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon
November 8, 1971

To: I.D. Merchant
Bridge Engineer

SUBJECT: Fremont Bridge Superstructure
Stadium Freeway
Contract No. 7276

Inspection at the time of
the crack in P.P. 3

On Nov. 5 you requested information on the location and duties of inspectors at the time the crack occurred at P.P. 3.

On Oct. 27 I instructed Jim Broad to have one of our men near the point where the arch intersects the tie girder at P.P. 3 while the jacking operation was going on. The man was not to watch the jacking as I considered this to be the contractors work. The contractors engineer (Ed Wortman) has personally supervised such jacking operatios in the past and he was also supervising this one. I gave instructions that the State inspector was to listen for a noise like a pistol shot. I assumed that if the weld (arch flange to tie girder) which was repaired here in Portland should open up under stress it would be audible.

Gerald Dalrymple was assigned and on Wed, Oct 27 he worked on his regular task of clean up inspection the area from P.P. 0 to P.P. 3. It is impossible to get from P.P. 3 to P.P. 4 on the lower deck system. The jacking stopped on Wed. to allow the contractor to straighten the column at P.P. 10. Dalrymple had become curious about the mechanics of the jacking operation so on Thursday he went to P.P. 4 when the jacking operation started. He stated that he had not been there very long when the crack occurred. He has stated that about all he had ask was how they were doing the work and he was told they were lowing the bridge two inches at a time first on one side and then on the other.

Immediately after the break Wortman order the structure cleared. I arrived as Wortman and the jack operators came out of the elevator at ground level. I ask Dalrymple if he knew what load was on the jacks and how far they had been lowered. He did not know but he said he would ask the ironworkers who were running the jacks. Wortman was contacting his supervisors at that time to tell them what had occurred. Dalrymple states in his memo of Oct. 28 that Ron Fugere told him there was not more than 100 tons on the jacks at the time of the cracking then they

NOTED
JOHN EDWARDS

did not want to talk about it anymore. This occurred within an hour or less of the incident so Dalrymple did not press them for information. He assumed that as soon as things settled down we would be able to get all the information from Wortman or some other regular company employee.

Dalrymple was not instructed to pursue this matter with the hourly employees of the company. I have been unable, due to the sudden influx of visitors, to find time to contact Wortman to determine how much information they will give us. Jim Broad has had an opportunity to ask Wortman a few questions and he received answers to his specific questions.

I have been advised that Jack Geer has been placed in charge of all matters concerning P.P. 3 and that I am to go through him. I am preparing a list of questions which I will present to Mr Geer and I am hopeful that he will answer them.

Respectfully,

R.O. Cunningham
Resident Bridge Engineer

ROC:dgh

cc: Tom Edwards
R.L. Schroeder
file

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NOV 8 1971

I-405-8(17)303
7276

November 8, 1971

Murphy Pacific Corporation
4300 Eastshore Highway
Emeryville, California 94608

Attention Mr. Jay P. Murphy

bc R. L. Porter
A. E. Johnson (enc.)
Ivan Merchant
L. I. Lindas
R. L. Schroeder
R. O. Cunningham

Gentlemen:

Re: Contract No. 7276
Fremont Bridge

We are in receipt of your letter of November 3, directed to Resident Engineer R. O. Cunningham, advising us of your intent to file claim for extra compensation for repair of the fracture in the south girder at Panel Point 3.

We appreciate your effort in setting up accounting procedures to pinpoint the cost of solving the problems presented by the failure. Until such time as the cause of failure has been determined we do not accept the premise that additional compensation is due.

Very truly yours,

R. L. Porter
State Highway Engineer

By

Tom Edwards
Deputy State Highway Engineer

TE:ja

cc United Pacific Insurance Company

General Insurance Company
of American

American Insurance Company

Mr. Jack Gear, Project Manager
Murphy Pacific Enterprises, Inc.

MURPHY PACIFIC CORPORATION
4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

November 3, 1971

Oregon State Highway Department
5821 N.E. Glisan Street
Portland, Oregon 97213

Attention: Mr. R. O. Cunningham
Resident Engineer

Re: Contract No. 7276; Fremont Bridge,
Stadium Freeway, Multnomah County

Gentlemen:

Confirming my telephone conversation this morning with Mr. Cunningham, this is to formally advise you, on behalf of Murphy Pacific Enterprises, of the situation which has arisen during the construction of the west backspan of the above-referenced bridge. I refer, of course, to the crack in the south box girder at panel point 3 which occurred on October 28, 1971 while support was being removed from the west backspan.

We are of the opinion that the work and materials which will be required to rectify this situation will entitle us to compensation additional to that which we were to receive at the prices and on the basis of payments specifically set forth in the contract and in previously issued extra work orders, price agreements, and supplemental agreements. We therefore intend to make claim for additional and extra compensation.

OLYMPIC 3-1717
AREA CODE-415
CABLE ADDRESS "MYPAC"

POST OFFICE BOX 4335
BAYSHORE STATION
OAKLAND CALIF 94623

NOTED
TOM EDWARDS

Our grounds for the proposed claim are that, under the contract, we are not responsible for the failure or for the extra expense which will undoubtedly result from this unfortunate situation.

I believe that the accounting procedures which we have already set up should be more than adequate to permit you to keep strict account of the actual cost of solving the problems presented by the failure. We shall be most happy to cooperate in any way we can to afford you proper facilities for keeping such accounts.

We would like to discuss with you, as soon as you are in a position to do so, a price agreement or supplemental agreement covering work which will be necessitated by the failure and its consequences for the job. In the meanwhile, we will, of course, proceed in accordance with your written instructions on a force account basis.

Although we feel we must write this letter in order to comply with the provisions of the Standard Specifications and of the contract, I want to assure you of our continuing, whole-hearted cooperation in completion of the job in the shortest possible time.

Very truly yours,

J. P. Murphy

JPM:dt

cc: I D Merchant
Tom Edwards
R.L. Schroeder

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NOV 5 1971
OFFICE OF
STATE HIGHWAY ENGINEER

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NOV 8 - 1971
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I 405-8(17)303
7276

November 5, 1971

bc: R. L. Porter
A. E. Johnson
Ivan Merchant
L. E. Lindas
R. L. Schroeder
R. O. Cunningham

Murphy Pacific Enterprises, Inc.
P. O. Box 23007
Oakland, California 94623

Attention: Mr. Jay Murphy

Gentlemen:

Re: Contract 7276
Fremont Bridge

Adjustment of the elevation of Falsework 2 on the east back span shall not proceed beyond the step shown on the third line from the bottom on Drawing 69500-ST-5 as shown in the erection details prepared by Earl Wright until the cause of the failure at Panel Point 3 on the west back span has been determined.

Very truly yours,

R. L. Porter
State Highway Engineer

By

Tom Edwards
Deputy State Highway Engineer

cc United Pacific Insurance Company

General Insurance Company
of America

American Insurance Company

Mr. Bill Choate
Vice President, Erection
Murphy Pacific Enterprises, Inc.

TE:ja kw

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NOV 8 - 1971
FOR FILE

I-405-8(17)303
7276

November 5, 1971

Murphy Pacific Enterprises, Inc.
P. O. Box 23007
Oakland, California 94623

bc R. L. Porter
A. E. Johnson
Ivan Merchant
L. I. Lindas
R. L. Schroeder
R. O. Cunningham

Attention Mr. Jay Murphy

Gentlemen:

Re: Contract 7276
Fremont Bridge

This is to confirm my discussion with you that the fractured pieces in the south tie girder are to be removed and replaced. At your earliest convenience, will you please advise me as to your method of operations to accomplish this (I presume you will ask your steel erection consultant to prepare details to perform this work); also, please inform me as to availability of materials.

You have been advised that the state is retaining Metallurgical Engineers, Inc. for consulting services. In order for them to proceed with their work, it will be necessary to remove a test sample from the fractured machined junction piece. I have ordered removal of a rectangular section approximately 2 inches by 36 inches from the machined piece, with one edge of the rectangular section encompassing the west fracture face of the break and being centered about the centerline of the girder.

Very truly yours,

R. L. Porter
State Highway Engineer

IDM:dh/TE:ja

By

Tom Edwards
Deputy State Highway Engineer

cc United Pacific Insurance Company
General Insurance Company
of America
American Insurance Company

Mr. Jack Geer, Project Manager
Murphy Pacific Enterprises, Inc.

Mr. R. E. Simpson, Division Engineer
Federal Highway Administration

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I-405-8(17)363
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon
November 4, 1971

To: Memo to the File:

SUBJECT: Fremont Bridge
Cracked Tie Girder Flange
Contract 7276

On this date a meeting was held in the office of Bob Cunningham in Portland. The following people attended:

E.B.Johnson (H.N.T&B)
Bob Cunningham
Ed Hardt
Bob Schroeder
Ivan Merchant
A. E. Johnson
Leonard Lindas
Harry Czyzewski, Metallurgical Engineers, Inc.
Walter Hart

Mr. Czyzewski attended the meeting long enough for us to discuss with him his testing, and we advised him that we did want him to do non-distructive testing on the north tie girder to determine if possible the condition of that metal. He will also examine thoroughly the south tie girder and extract certain permissible samples to be tested in laboratory. He submitted to us copies of the proposed agreement to be approved by the Highway Division and these will be perused at a later time.

Mr. Merchant went over the plans and the erection diagram and sketches with Ed Johnson and explained to him the break which occurred last week and furnished him some photographs,and additional photographs will be supplied at a later date, a copy of the contract plans, erection drawings and special provisions.

It was agreed that we would ask HNT&B to perform the following:

1. Check the erection procedures as they apply to west back span erection (the present condition) between panel points 0 and 14. This will include an analysis and evaluation of all erection steps and stresses up to the point of fracture of the steel beam and then include the remaining step or steps necessary for the complete back span erection.

2. Check and evaluate the erection procedure and stresses and strains of the back spans during the placement of the 900 foot center span.

3. Check and evaluate the stresses of the completed structure for all conditions of loading.

GPO 884-794

It was agreed that HNT&B will submit to us a letter proposal outlining the scope of services and method of payment. It was agreed that payment would be based on cost plus a fixed fee and that supporting data would be furnished. It was also agreed that phase I would be completed as soon as possible and work would be conducted on an expedited basis including overtime if necessary.

It is agreed that in the event of litigation, HNT&B will appear as expert witnesses in support of their findings and conclusions.

HNT&B will furnish the Highway Division a written report summarizing their findings and back-up calculations.

R. L. Porter
State Highway Engineer

by

A. E. Johnson
Assistant State Highway Engineer

AEJ:cw
cc: HNT&B - E. B. Johnson
Tom Edwards
Bob Cunningham
Robert Schroeder
Ivan Merchant
A. E. Johnson

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It is agreed that in the event of litigation, HNT&B will appear as expert witnesses in support of their findings and conclusions.

HNT&B will furnish the Highway Division a written report summarizing their findings and back-up calculations.

R. L. Porter
State Highway Engineer

by

A. E. Johnson
Assistant State Highway Engineer

AEJ:cw
cc: HNT&B - E. B. Johnson
Tom Edwards
Bob Cunningham
Robert Schroeder
Ivan Merchant
A. E. Johnson

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7276

November 3, 1971

Murphy Pacific Enterprises, Inc.
P. O. Box 23007
Oakland, California 94623

bc R. L. Porter
A. E. Johnson
Ivan Merchant
L. I. Lindas
R. L. Schroeder
R. O. Cunningham

Attention Mr. Jay Murphy

Gentlemen:

Re: Contract 7276
Fremont Bridge

My letter to you of November 2 incorrectly stated that the Highway Division had retained Charlton Laboratories to investigate the failure of the main girder at the Fremont Bridge.

The firm retained is Metallurgical Engineers, Inc.

Very truly yours,

R. L. Porter
State Highway Engineer

By

Tom Edwards
Deputy State Highway Engineer

TE:ja

cc United Pacific Insurance Company
General Insurance Company
of America
American Insurance Company

Mr. Bill Choate
Vice President, Erection
Murphy Pacific Enterprises, Inc.

DEPARTMENT
FORM E-20
NOV 8 - 1971

I 405 8(17)
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
November 3, 1971

To:
Memorandum to the Files

SUBJECT: Fremont Bridge Superstructure
Tie Girder Failure
Contract 7276

While in Eastern Oregon on Thursday, October 28, I received a radio message to call Mr. A. E. Johnson. Upon returning to The Dalles Maintenance Office, I called Mr. Johnson at about 3 p.m. and was advised of the tie girder failure on the back span of the Fremont Bridge.

Early Friday morning, October 29, Mr. Walter J. Hart and I left for Portland to meet with Highway personnel and personnel from our consultant, Parsons, Brinckerhoff, Quade, & Douglas. Arriving at Mr. Cunningham's office a general discussion of the failure with Highway and Federal Highway Administration personnel took place. Those in attendance being Roy Tokerud, Herbert Schell, Clifford Christianson from the Federal Highway Administration; R. L. Schroeder, E. L. Hardt, R. O. Cunningham, John Jenkins, James Chidsey, Ed Rief, Walter Hart, and myself from the Highway Division in the morning discussion group, along with members of Mr. Cunningham's crew.

Mr. Cunningham had taken a series of pictures of the break from both inside and outside the girder and these pictures and the erection and contract plans formed the basis of the discussion.

About 1 p.m. Mr. Lou Silano and Mike Abraham of Parsons, Brinckerhoff, Quade & Douglas arrived from New York. They were briefed on the events leading up to the failure and shown the above-mentioned photographs. At this time we went up on the structure and viewed the break from the outside as well as from the inside of the box girder. Various items were pointed out and mentioned in this examination; these being (1) the granular type of fracture with ridges lying vertically in the fracture faces, (2) the lack of any necking down of the material in the bottom flange of the tie girder, (3) a vertical offset of approximately 1/8 inch at the break with the section toward Panel Point 3 being above the section of girder toward Panel Point 4. There was also a horizontal offset of the webs of approximately 1/8 inch. At this time I can not say in which direction.

The break in the bottom flange and the bottom section of the webs occurred at the next to the last step of Stage 6 in the erection procedure as listed on sheet 69500-ST2. This step required a lowering of the tie girder and arch rib at Falsework 2 approximately 15 inches in order to drill and bolt a portion of orthotropic deck section 9D. Information is to the effect that

NOTED
TOM EDWARDS

approximately 14 1/2 inches of lowering had occurred at Falsework 2 on the south girder at the time of the break. Mr. Cunningham upon being advised of the break and in conjunction with Mr. Choate, Job Superintendent, gave directions that the jacks were to be reinserted under the arch rib at Falsework 2 and the section raised approximately 3 to 3 1/2 inches. This was done and there has been no further increase in the web cracks.

Indications are that the bottom flange crack occurred immediately west of the full penetration butt weld joining the 66 x 3 1/4 inch tie girder flange to the machine junction piece and did occur in the heat affected zone with the possibility that a small portion of the fracture face is in the weld proper.

Upon our return to Mr. Cunningham's office, Mr. Choate, Job Superintendent for Murphy Pacific, Tony Diaz, Gus Spirz and Jim Riffle (the last three men from Murphy Pacific's Emeryville office), Mr. Wright and Richard Lieber of Earl and Wright, consultants on the erection, were met at Cunningham's office. At this time it was decided that nothing further could be done over the weekend and that no work whatever was to proceed on the west side back span until further decisions had been made; that Falsework 2 would be left in place with the jackssupporting the steel work; that Murphy Pacific were to proceed with finding structural steel for a new Falsework 4 tower for east back span erection; that Parsons, Brinckerhoff, Quade & Douglas were to undertake an immediate reappraisal of their design work and the erection work prepared by Earl & Wright; and that a metallurgist would be retained to sample and check the steel in the machined junction piece adjacent to the crack. Also, that they were to confer with Earl and Wright on the erection procedures. That Parsons, Brinckerhoff, Quade & Douglas would immediately finish the bolted splice detail begun in June of this year and clear some items of the splice details with the Federal Highway Administration Office in Washington.

There being nothing further that we could do, Mr. Hart and I left for Salem.

Over the weekend I studied the problem of erection with the results of the break in mind and came to the conclusion that the break is the result of an error in the erection procedure. In My opinion the break occurred because of the lowering of the point by approximately 15 inches which resulted in secondary bending and shear stresses in the bottom flange of the tie girder at the break point which could not be accommodated by the steel, consequently the rupture.

On Monday morning, November 1, after discussion with Highway personnel, I called Mr. Silano in New York and discussed with Mr. Silano and Mr. Abrahams our theory of the causes of the rupture. At this time I again requested that they study the question of erection procedure and erection stresses. A close study of the erection procedures immediately prior to the rupture explain the serrated surfaces of the ruptured face of the tie girder which in my opinion failed in a combination of localized shear and bending which was not contemplated in the erection stresses. Later in the morning Mr. A. E. Johnson and I went to Portland to view the ruptured girder.

Discussion in the Highway office on Tuesday resulted in the preparation of a letter dated November 2 by Mr. Tom Edwards to Murphy Pacific Enterprises, Inc., which indicates the State's position in this matter.

On Wednesday morning, November 3, I again called Mr. Silano to inquire about his progress on the further studies of the problem. He indicated that they had nothing final at this time but hoped to have an answer by Friday of this week. He asked about proceeding on the finalizing of the bolt splice plates for the Panel Point 3 area on the west side and I agreed that he should proceed with these details. He indicated that he had completed the details for bolted splices for the east side girders and mailed them out on Tuesday, November 2. Mr. Silano will call at the end of their work day on Thursday, November 4, to advise as to their progress.

This is a general summary of events to this date.

Ivan D. Merchant
Bridge Engineer

IDM:dh

cc Tom Edwards
A. E. Johnson
W. J. Hart
R. L. Schroeder
R. O. Cunningham

RECEIVED
NOV 5 1971
OFFICE OF
STATE HIGHWAY ENGINEER

REC'D
NOV 4 - 1971

OR Fiscal

I-405-8(17)503
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
November 3, 1971

SUBJECT: Contract 7276
Fremont Bridge

To: MEMO TO THE FILE

I had further discussions with Jay Murphy of Murphy Pacific Enterprises, Inc. concerning Panel Point 3 on this date. Mr. Murphy informed me that the bonding company's attornies have advised them to do work on Panel Point 3 only upon written order.

I see nothing wrong in this and so told Mr. Murphy. Written orders concerning this work will be issued over my signature.

Mr. Murphy also advised that the bonding company's lawyers were retaining an independent consultant to check (if I understood him correctly) both the design and the erection procedure stresses at this point. The consultant's check obtained by the bonding company's attornies will be privileged information and I have therefore contacted Howard, Needles, Tammen and Bergendoff with a view to retaining them to do the same study for the Highway Division.

Tom Edwards
Deputy State Highway Engineer

TE:ja

cc R. L. Porter
A. E. Johnson
Ivan Merchant
L. I. Lindas
R. L. Schroeder
R. O. Cunningham

RECEIVED
NOV 3 - 1971
FOR FILING

I-405-8(17)303
7276

November 2, 1971

Murphy Pacific Enterprises, Inc.
P. O. Box 23007
Oakland, California 94623

Attention Mr. Jay Murphy

Gentlemen:

Re: Contract 7276
Fremont Bridge

Confirming my telephone conversation with you this date re the fracture in the bottom flange of the east main girder at Panel Point 3 of the Fremont Bridge, we are proceeding on the following program:

1. Murphy Pacific shall immediately construct the necessary falsework at Panel Point 3 to provide access and working area for Charlton Laboratories who have been retained as metallurgists by the Oregon State Highway Division to determine the physical properties of the steel at the point of failure.

2. Murphy Pacific shall immediately proceed to procure an additional tower to be used as falsework tower No. 2 on the East Bank span.

3. A complete independent recheck of the erection procedures, erection stresses, falsework reactions and elevations shall be secured. At the time of writing this memorandum, Murphy Pacific and the Oregon State Highway Division have discussed but not agreed on the principle that the independent checking firm should be one mutually retained by both parties. This will be firmed up by a later memorandum.

4. Erection of the East Bank span and the main

span shall continue as originally planned.

5. The method of correction of the failed member has not been determined at the time of writing this memorandum, nor will it be determined until the cause of the failure has been pinpointed.

Very truly yours,

R. L. Porter
State Highway Engineer

By

Tom Edwards
Deputy State Highway Engineer

TE:ja

cc United Pacific Insurance Company
P. O. Box 1216
Tacoma, Washington 98401

General Insurance Company
of America
1500 S. W. First
Portland, Oregon 97201

American Insurance Company
921 S. W. Washirgton Street
Portland, Oregon 97205

Mr. Bill Choate
Vice President, Erection
Murphy Pacific Enterprises, Inc.
5051 North Channel
Portland, Oregon 97217

bc R. L. Porter
A. E. Johnson
Ivan Merchant
L. I. Lindas
R. L. Schroeder
R. O. Cunningham

RECEIVED
NOV 18 1971
FORM E-30 (REV 10-69)
FOR FILES
I-405-1(22)23
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

October 28, 1971
Portland, Oregon

To: Memo to the files

SUBJECT: Fremont Bridge Superstructure
Stadium Freeway
Contract No. 7276

On Thursday (10-28-71) I was standing by while jacks at falsework No. 2 were being released. Yesterday (10-27-71) the contractor started releasing the 200 ton jacks under the arch ribs at falsework No. 2. This was completed at approx. 3:00 P.M. Then the 400 ton jacks under the tie girders were partially released. (Approx. 10" out of a planned 15"±) This was because the columns at the panel point 10 sway frame had a 3/4" "wow" in them and they wanted to correct this before proceeding with the remaining release of the 400 ton jacks. (An additional 2"± release was planned after longitudinal splice bolts were added in orthotropic deck section 9D). The release of the 400 ton jacks was stopped at approx. 4:00 P.M., for the remainder of the day, Wed. 10-27-71. Between approx. 8:30-10:30 this morning, Thur. 10-28-71, the above mentioned "wow" in the panel point 10 sway frame was removed by the adjusting struts between panel points 9 and 10. The remainder of the planned release of the 400 ton jacks under the tie girders was commenced. At 11:00 A.M. a loud report was heard and falsework No. 2 trembled. Ed Wortman (Murphy Pacific Engr.) and two ironworkers operating the jacks stopped everything and looked for the trouble. A large diagonal crack was seen in the web of tie girder 205G1L (So. girder) where the arch rib was welded to the bottom of the girder. Wortman immediately had the men jack back 180 tons. (this figure came from Wortman) Wortman then left for his office and advised the ironworkers to leave the span. A closer examination a short while later after Bob Cunningham had been summoned to the site revealed that the crack ran across the bottom flange and part way up both webs, with the inside web crack the longer of the two. Ed Hardt and Jim Broad came up with Bob to look things over. The two ironworkers told me that they were releasing the jacks about 2" at a time. First one side and then the other. (From John Dietz) They said not more than 100 tons were on the jacks at the time of the cracking. (From Ron Fugere) They didn't say which one they were releasing at the time and didn't want to talk about it anymore. About 2:00 P.M. Don Schut and I looked at the jacks, and all the gauges were reading zero. The contractor had also put back the 200 ton jacks under the arch ribs. Gauges read zero because hydraulic pressure had been released and load was resting on jacking rings. Don and I checked over the crack from inside the tie girder and placed reference marks to check on further movement.

NOTED
TOM EDWARDS

GPO 934-79-736

Bob Cunningham and Jim Broad came out and Bob took photos from inside. Bill Choate and other personnel from Murphy Pacific were also present at this time. The men involved in the jacking for Murphy Pacific both yesterday and today were Edward Wortman (Engr.), John T. Dietz (I.W.) and Ronald F. Fugere (I.W.). Don and I also checked the interior of the north side tie girder and no visible damage was noted. Below is information Don and I obtained on the crack: Note: On original notes by Dalyrimple there was a sketch showing approx. location of cracks on each side of tie girder.

Note: Crack is almost a uniform $\frac{1}{8}$" wide and is displaced approx. $\frac{1}{4}$" to north. Crack is continuous down one web, across bottom flange, and up other web.

Final release of falsework number two was to take place after 1st. (west end) 15'-6" of longitudinal splice bolts were put in at orthotropic deck section 9D.

Gerald P. Dalyrimple
10-28-71

Note: This is a copy of entry in diary of Gerald P. Dalrymple. Original is entered in diary for 10-28-71, signed and dated by Gerald P. Dalyrimple.

RECEIVED
FEB 10 1972
FOR FILING
I-405-1(11)503
7276

MURPHY PACIFIC ENTERPRISES
4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

October 26, 1971

Oregon State Highway Division
5821 N.E. Glisan
Portland, Oregon 97213

Attention Mr. R.O. Cunningham
Resident Bridge Engineer

Gentlemen:

Fremont Bridge - Contract 7276
Time Adjustment

Reference is made to your letter of December 2, 1970 and December 3, 1970, and Article 8-8 of the General Special Provisions regarding adjustment of contract time.

We respectfully request an increase of 448 days for the number of calendar contract days. This request is based upon the Weekly Statement of Calendar Charges for the week ending September 25, 1971, which indicates November 30, 1971 as the final contract day.

We are enclosing herewith five (5) executed copies of your Form E320, Contractors Request for Increase in Number of Workdays to Complete Construction Contract, and our referenced detail request.

Your review and approval is hereby requested.

Very truly yours,

MURPHY PACIFIC ENTERPRISES

Jay P. Murphy
Vice President

JPM:nl

Enclosures

TELEPHONE (415) 653-1717 . CABLE 'MYPAC' . MAILING ADDRESS P.O. BOX 23007, OAKLAND, CALIFORNIA 94623

Contract time up to Oct 28.

448 Calendar days requested.

strike - 151 days.

448
151 → Dec 7 → May '72.
297 still needed

350 families
1 would attempt

30K

→ Modified P.P. 3 ←

+ 162 + Days Stop work

Leonard Lindag will do
Legal research.

E—280 (Rev.)—MM—8-66

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon

Date October 26, 1971

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 860 days to 1308 days, within which to complete our Contract No. 7276, without the assessment of liquidated damages. The said contract is described as follows:

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

Please refer to attached report titled "Fremont Bridge Time Extension" dated October 26, 1971.

Respectfully submitted,

MURPHY PACIFIC ENTERPRISES
Contractor

By J. F. Murphy

Bond No. 620402

CONSENT OF SURETY

Date October 26, 1971

We, General Insurance Company of America, as surety on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

John U. Davis Attorney-in-fact
450 SANSOME STREET, SAN FRANCISCO, CAL.

(SEAL)

Resident Agent

MURPHY PACIFIC ENTERPRISES

State of Oregon
Fremont Bridge Superstructure
Contract No. 7276

TIME EXTENSION REQUEST

October 26, 1971

Fremont Bridge
Time Extension Request

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A.	Material Procurement Delays	3., 4.
B.	Fabrication Delays	5.
C.	Yard Assembly Delays	6., 7.
D.	Erection Delays	8., 9., 10.

CHARTS

Original Summary Schedule

Summary of Delays

Delay Schedule

West Side Casting Schedule

East Side Casting Schedule

Murphy Pacific Enterprises

Fremont Bridge Superstructure
Time Extension

SUMMARY

The fabrication and erection of the Fremont Bridge Superstructure has been subject to considerable delay due to various, and in some cases, unrelated circumstances. At the time of bid, in the best judgement of Murphy Pacific, the job could have been completed in 860 calendar days (November 30, 1971). This decision was based upon

1. Delivery promises made by material producers, and

2. A reasonable assumption that upper and lower fixed shoes at P.P. 10 could be obtained meeting the requirements of the plans and specifications in a reasonable length of time. (See Bethlehem Quote Dated June 19, 1969.)

When, in fact, it was realized in October of 1969 that obtaining the subject castings on schedule was not feasible, the start of erection was delayed from June 1, 1970 to September 1, 1970.

In January of 1970 it became apparent that the promised delivery date of ASTM A-514 steel would not be met due to a labor strike against the producers of the alloying element, nickel. Further, it was at this point in time established that the only producers of ASTM A-514 steel could not supply it in approximate 55 foot lengths for arch rib fabrication as stated prior to bid to both Murphy Pacific and Parsons, Brinckerhoff, Quade and Douglas (PBQ&D). Due to splicing operations, an undetermined delay in start of fabrication would result and, consequently, delay start of erection.

In the period of January to May of 1970, Murphy Pacific, in constant communication with the casting manufacturer and the mill producer of A-514, elected by revising fabrication sequence, in consultation with PBQ&D, to pre-assemble arch chords prior to receipt of upper and lower shoes. This action was principally necessitated by

1. A series of upper and lower shoe casting failures, and

2. Receipt of material out of sequence due to rolling schedules of shorter length material.

We then scheduled erection to commence on January 1, 1971.

On August 21, 1970 it was discovered that a crack had developed in the junction of arch to tie girder at P.P 3. On the same date, laminations were discovered in certain of the A-514 plates. Resultant delays in fabricating operations and continual reassessment of the progress of casting deliveries, necessitating rescheduling of the machining time available at Bethlehem Shipyard, San Francisco, led to a decision in October of 1970 to commence erection in April of 1971. In fact, erection started April 15, 1971.

At the time of bid it was anticipated that back span erection would take approximately four months. On the west back span this was not accomplished largely due to

1. Weld repairs - Girder 205-G1R
2. Harbor traffic
3. Railroad restrictions
4. Labor wildcat walkouts, and
5. Unsafe working conditions.

As of November 1, 1971 the erection of the west back span is essentially complete; erection of the east back span and installation of the center span falsework at Swan Island is in progress. Equipment not originally scheduled for the work, principally the Derrick Barge "Elizabeth" has been transferred to the job site. All material for the project has been fabricated and is either erected or stored on Swan Island.

In our best judgement, scheduled work for this project will be complete by February 20, 1973.

FREMONT BRIDGE

Time Extension Request

A. Material Procurement Delays

1. Nickel Shortage

A time extension is requested to allow for the delay in delivery of the A514 steel plates for shop fabrication. This delay was due to a shortage of the alloying element, nickel, which resulted from a labor strike. We request a time extension of 114 calendar days to cover mill production ddays and impact upon project planning and scheduling. The delay period extends from July 23, 1969 to November 14, 1969.

Reference

1. Murphy Pacific Enterprises letter of June 11, 1970.
2. American Bridge letter of May 13, 1970.
3. American Bridge material list of May 11, 1970.
4. American Bridge letter of October 18, 1971.
5. Article 8.8 of the General Special Provisions.

2. Mail Strike

We request an extension in contract calendar days for delays in correspondence concerning fabrication details which resulted from a strike by the post office workers. An extension of ten calendar days is requested for the period of March 18, 1970 to March 27, 1970 inclusive.

Reference

1. Murphy Pacific Enterprises letter of March 30, 1970.
2. Article 8.8 of the General Special Provisions.

3. Laminated Plate Delays

A time extension is requested for delays in shop fabrication due to defective material found during fabrication. Inspection procedures did not take into account possible major scheduling problems which could result from initiating inspection at the fabrication shop in lieu of the steel mill. We request a time extension of 54 calendar days to cover the production delays and the impact upon project planning and scheduling. The delay periods extends from August 21, 1970 to October 23, 1970.

Reference

1. PTL letter of December 12, 1969.
2. Memorandum of Prefabrication Meeting of December 19, 1969 date January 6, 1970.
3. Article 6-7, Samples, Testing and Certification of Materials.
   Article 4-3.40, Access to mills established.

FREMONT BRIDGE

Time Extension Request

B. Fabrication Delays

1. Panel Point No. 3 Revision

A time extension is requested for the increased time required to determine the corrective measures and to complete the work as required under Price Agreement No. 2 at Panel Point No. 3. A total of 94 calendar days is requested to cover the resulting production delays and the impact upon project planning and scheduling. The delay period extends from August 21, 1970 to November 22, 1970.

Reference
1. Murphy Pacific Enterprises letter of August 25, 1970.
2. Price Agreement No. 2 of October 9, 1970.
3. Murphy Pacific Enterprises letter of November 27, 1970.
4. Article 8.8 of the General Special Provisions.

2. Stiffener Installation

We request an extension in calendar days to allow for the increased fabrication as required by Price Agreement No. 6. A total of 22 calendar days is requested for the following periods: 1) last week of July, 1970, 2) middle of September, 1970, 3) first week of November, 1970, and 4) middle of November, 1970.

Reference
1. Directed to install stiffeners - June 26, 1970.
2. Murphy Pacific Enterprises letter of November 2, 1970.

Time Extension Request

C. Yard Assembly Delays

1. Production of Top Bearing Castings

A time extension is requested for additional time required to manufacture the top castings of the fixed shoes. By specification these items were required for yard preassembly work at P. P. 10.

There was not sufficient time prior to bid to evaluate potential manufacturers capable of meeting the requirements of Revision Letter No. 3. Configuration and inspection requirements casued by the subject revision, substantially reduced the number of capable and interested foundries.

The manufacture of these castings is a specialty item which requires highly specialized knowledge, craftsmanship and equipment. The castings are major components of the bridge and the manufacture of these castings controls the proper scheduling of bridge preassembly during fabrication and field erection.

Immediately following award of contract Murphy Pacific contacted all known North American, Canadian and Japanese suppliers capable of performing the work. Only one supplier, National Forge Company of Erie, Pennsylvania, was interested in accepting a contract. However, they stipulated that although all efforts would be made to meet the inspection requirements, they could not guarantee it. Further, they did not have the machining capability and this work had to be further sublet. It is a matter of record that the aforementioned investigation took 75 days.

Production problems were encountered in the castings due to core shifts and cracking. Tolerance limitations were exceeded when molding cores shifted during the casting operation due to the difficulty in placing temporary supports required by the large expanse of cast plate and the configuration. Cracks occurred due to the difficulty in proper cooling of this configuration.

A total of 357 calendar days (327 - west side, and 357 - east side) is requested to cover casting production delays and the impact upon project planning and scheduling. The delay periods extend from March 16, 1970 to February 5, 1971 and from July 27, 1970 to July 20, 1971, respectively for the west and east sides.

Reference

1. Contract Standard Specifications, Article 3-3, examination of Plans, Specifications and site of work.
2. Contract Standard Specifications, Article 8-1, Assignment Subletting, Specialty Items, etc.

2. Paint Rejection

A time extension is requested for delays created by the vinyl paint rejection during yard applications of paint to the interior of the bridge built-up-box members. A delay time of 48 days is requested to include the delay and impact of the work stoppage upon project planning and scheduling. This occurred during the period of November 4, 1970 to December 21, 1970.

Reference

1. Memo dated May 26, 1971.
2. State of Oregon letter dated December 18, 1970.
3. Murphy Pacific Enterprises letter of November 27, 1970.

Time Extension Request

D. Erection Delays

1. Bearing Assembly Plate Location

A time extension is requested for the increased time required for determination of and completion of corrective measures for the bottom bearing assembly plates. This work is covered under Price Agreement Nos. 7 & 8. Original scheduling required a precise survey and analysis to be made prior to setting the castings. A total of 366 calendar days is requested to cover this delay and the impact of this delay upon our project planning and scheduling.

Reference

1. Chronicle - Bearing Assembly Layout Correction.
2. Article 8-8, Adjustment of Contract Time, subparagraphs (a), (e), and (f).
3. Article 8-7, as modified by Contract Revision Letter No. 1.

2. Production of Bottom Bearing Casting Shoes

A time extension is requested to allow for the late delivery of the bottom bearing casting shoes required for the start of bridge erection. The reasoning for this request is presented under the request for recognition of yard assembly delays due to the late delivery of the top fixed shoe castings. A time extension of 304 calendar days (284 - west side and 304 - east side) is requested for delivery delays and the impact of this delay upon the project planning and scheduling. Delay periods extend from May 18, 1970 to February 26, 1971 and from October 5, 1970 to August 5, 1971 for the west and east sides respectively.

3. Weld Repair - Girder 205-GIR

A time extension is requested to cover the delays in erection created by the hold placed on tie girders 205-GIR and 205-GIL.

The tie girders were subject to shop inspection and

approval by our representatives. We request an extension in time of 54 calendar days to allow for erection delays and for the impact of this delay upon our project planning and scheduling.

State Standard the matter 34 days

Reference
1. State of Oregon letter of June 25, 1971.
2. Murphy Pacific Enterprises letter of August 5, 1971.

4. Unsafe Working Conditions

An extension of time is requested to adjust for days (to date, through September 25, 1971) on which unfavorable or hazardous conditions of work exist. The following days are requested:

Week Days - August 31, 1971
September 1, 1971
September 16, 1971
September 17, 1971
Total 4 x 7/5 factor = 6 Calendar Days
(See Reference Note 4, below)

Weekend Days - September 5, 1971
September 28, 1971
Total 2 Calendar Days

Total Calendar Days Requested 8

Reference
1. Article 8-8 of the General Special Provisions.
2. Occupational Safety and Health Act of 1970.
3. Murphy Pacific Enterprises letter of September 27, 1971.
4. Factor adjust working days into calendar days, assuming a five day work week.

5. Harbor Traffic Delays

An extension of time is requested for interference and delays as a result of harbor traffic during our bridge erection. An extension of four calendar days (3 x 7/5 factor) is requested to cover these delays and the impact of these delays upon our project planning and scheduling. The delays occurred on the following dates: 1) April 5, 1971, 2) May 7, 1971, and 3) June 4, 1971.

Reference
1. Murphy Pacific Enterprises letter of June 18, 1971.
2. Murphy Pacific Enterprises letter of April 27, 1971.

6. Labor Wildcat Walkouts

An extension in time is requested to adjust for days during the bridge erection in which labor craft people walked off the job without the direction or consent of our supervisors. The progress of the job was impaired by walkouts on the following dates:

April 9, 1971
April 16, 1971
May 21, 1971
May 26, 1971
June 10, 1971
September 2, 1971
September 3, 1971
Total 7x7/5 factor = 10 calendar days

Reference
1. Article 8-8 of the General Special Provisions.

7. Railroad Restrictions

An extension of time is requested for delays resulting from the restrictions set forth by the railroads during the period of September 14, 1971 through September 17, 1971. This access restriction prevented our erection from proceeding in an efficient manner. A time extension of six days is requested for this delay.

Reference
1. Murphy Pacific Enterprises letter of September 22, 1971.
2. Article 7-28 of the Special Provisions, Relations with Railroad Company (part (a), last paragraph).

MURPHY PACIFIC ENTERPRISES

Fremont Bridge Superstructure

ORIGINAL SUMMARY SCHEDULE

Contract No. 7276

1969 | 1970 | 1971

JUL AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUNE JUL AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV

WEST SIDE

Material Deliveries

Fabricate Arch

Preassemble

Complete Loadout & Ship

Erect

Castings

Top

Preassemble

Bottom

Install Falsework

Fabricate Tie Girder

Set Castings & Align

EAST SIDE

Material Deliveries

Install Falsework

Fabricate Arch

Complete Loadout & Ship

Preassemble

Castings

Top

Bottom

Erect

ALL STRUCTURE

JOB COMPLE

Start Formwork

Place Decks & Parapets

Fabricate Tie Girder

CENTER SPAN

Fabricate Arch

Preassemble

Erect at Swan Island

Float-in, Jack & Erect All Center Span Steel

Complete Loadout and Ship

Fabricate Tie Girders

Summary Table
Fremont Bridge Delays

		Time Requested (Calendar Days)	
A.	**Material Procurement**		
	1. Nickel Shortage (U.S. Steel)	114	
	2. Mail Strike	10	1/10
	3. Plate Laminations	64	
B.	**Fabrication**		
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	6. Labor Wildcat Walkouts	10	10
	7. Railroad Restrictions	6	

448

October 26, 1971

FREMONT BRIDGE DELAYS SCHEDULE

1970 | 1971

FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

Material Procurement

1. NICKEL SHORTAGE (USS) — Strike - August From June 9 to Nov 14, 1969
2. MAIL STRIKE — 18 to 23
3. PLATE LAMINATION — 21 to 29

Fabrication

1. PANEL POINT 3 REVIS. — 21 to 42
2. STIFFENER INSTALLATION

Yard Assembly

1. PRODUCTION OF TOP BEARING CASTINGS — 9 to 5 (WEST SIDE); 22 to 20 (EAST SIDE)
2. PAINT REJECTION — 1 to 21

Erection

1. LAYOUT BEARING PLATES — 1 to 3
2. PROD. BOTTOM CASTING — 18 to 26; 5 to 8
3. ERECTION P.P. No. 3 — 9
4. UNSAFE WORKING COND. — 31
5. HARBOR TRAFFIC — 8 (total)
6. LABOR WILDCAT WALKOUT — 16; 9 10 11; 23
7. CIRCUS TRAIN — 14 to 15

OCT. 24, 1971

1969 — 1970 — 1971

AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AU

2ND BOTTOM CASTING

Non-X-Ray Beth. Compl. — 15 — 25 wks — 16

Nat. Forge X-Ray Cast Machining — 1 — 20 wks. — 20 — 24 wks — 5

Beth Mach. — 11 — 22

Actual Completion — 28 — 5

327 DAYS

2ND TOP CASTING

Non X-Ray Beth. Compl. — 15 — 35 wks — 18

Nat. Forge X-Ray Cast Machining — 1 — 22 wks — 4 — 24 wks — 19

Beth Mach. — 25 — 26

Actual Completion — 18 — 10 — 14

284 DAYS

1969 — 1970 — 1971

		AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
4TH TOP CASTING	NON-X-RAY BETH-COMPLETE							2			11		27												
	NAT. FORGE X-RAY CAST MACHINING											1						14							
	BETH MACH.											6	8												
	Actual Completion																								20
4TH BOTTOM CASTING	NON X-RAY BETH-COMPLETE													18					5						
	NAT. FORGE X-RAY CAST MACHINING													1			16								
	BETH. MACH.																	6	7						
	Actual Completion																								

357 DAYS

304 DAYS

Bethlehem Steel Corporation

DISTRICT SALES OFFICE: 100 CALIFORNIA STREET
MAIL: BOX 3494
SAN FRANCISCO, CALIF. 94119
Phone: 981-2121
AREA CODE 415

COLBY HOWE
Manager of Sales
J. A. PERKO
Assistant Manager of Sales
M. R. LUTGE
Contracting Manager

June 19, 1969

Murphy Pacific Corporation
4300 Eastshore Highway
Emeryville, CA

Attention: Mr. Harold Vogel

Gentlemen:

Subject: Oregon State Highway
Bridge No. 2529

Regarding our telephone conversation of this date on the above subject, we are pleased to quote as follows:

We propose to furnish the castings as listed herein, made of a cast alloy steel in conformity with ASTM Specification A-148, Grade 90-60, for Item Nos. 1 and 2 and ASTM Specification A-27, Grade 65-35, for Item No. 3, supplied in the "as cast" condition for the following per pound prices.

We also list below our additional prices to furnish the necessary suitable pattern equipment required for manufacture of these castings along with our additional prices to finish machine in conformity with the drawings listed.

Item No.	Qty.	Description	Drawing No.	Est. Rough Wt. Each	Est. Fin. Wt. Each	Price Per Lb.	Pattern Price	Mach. Price Each
1	4 pcs.	Top shoes	25267	84,400#	76,500#	32.80¢	$5,430.00	$ 7,500.00
2	4 pcs.	Bottom shoes	25267	100,000#	89,400#	31.10¢	8,090.00	14,025.00
3	38	Suspender guides	25253	397#	350#	36.10¢	250.00	410.00

Item 1 and 2 above are quoted f.o.b. cars, Bethlehem, Pennsylvania and Item No. 3 above quoted f.o.b. cars, Steelton, Pennsylvania.

We can deliver Item 1 and 2 above beginning with one piece in 19 to 21 weeks after receipt of an order and full information at our plant and complete at the rate of one piece every 5 weeks thereafter.

Attachment No. 1

Item No. 3 can be delivered complete in 27 weeks after receipt of an order and full information at our plant.

The prices above include magnaflux testing in the fillet areas of the Items 1 and 2 only.

This quotation is subject to Terms and Conditions of Sale, BSC Com. 1a (Rev.E 12-65), attached.

Very truly yours,

BETHLEHEM STEEL CORPORATION
Colby Howe, Manager of Sales

BY: D. G. Olson

DOlson:lb
attachment

RECEIVED
OCT 20 1971

FORM B-30
FOR FILING

I-405-8(17)303
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
October 19, 1971

SUBJECT: Fremont Bridge
Contract 7276
Calendar Day Charges
vs. Safety

To:

Mr. R. L. Schroeder
Metropolitan Engineer

METRO

Attention Mr. Edward L. Hardt
Metro Bridge Const. Engr.

NOTED
A. E. JOHNSON

Your letter of October 6 regarding calendar day charges vs. safety on the Fremont Bridge project has been reviewed. It is difficult to reply directly to your letter or to answer Cunningham's specific questions.

The answers must lie in the ground rules established in Cunningham's letter to Tom Edwards on August 26, 1971, and the application of good judgment to their enactment. More specifically, in the second-to-last paragraph of the ground rules.

If the hazardous condition exists in the first three-fourths of the working shift, then no time will be charged for that day. If the hazardous condition continues for several days (including Saturdays, Sundays, and holidays), then no work days would be charged until the hazardous condition subsided. The contractor is responsible for furnishing the work force and the initiative for determining if unsafe working conditions exist should remain with him. If the Resident Engineer concurs that hazardous conditions exist, a work day would not be charged.

It should be pointed out that the contractor is required to provide a place of work free of hazardous conditions. It then follows, that if the men can be efficiently utilized at other locations on the project where the hazards do not prevent them from working, calendar days should be charged.

ORIGINAL SIGNED
IVAN D. MERCHANT

Ivan D. Merchant
Bridge Engineer

RECEIVED
OCT 20 1971
OFFICE OF
STATE HIGHWAY ENGINEER

AAR:dh

cc A. E. Johnson
R. O. Cunningham

RECEIVED
SEP 27 1971
FOR FILING

OREGON STATE HIGHWAY DIVISION

NOTED
A. E. JOHNSON

I-405-8(17)303

HIGHWAY BUILDING • • • SALEM, OREGON • • • 97310

7276

September 27, 1971

Murphy Pacific Enterprises
5051 N. Channel Avenue
Portland, Oregon 97217

RE: Fremont Bridge, Stadium Freeway
FAP No. I-405-8(17)303
Contract No. 7276

Attention: Mr. Alex Jeffrey

Gentlemen:

Reference is made to the EEO compliance review conducted in Portland on September 21, 1971.

The Oregon Highway Division has placed your organization in a pending status concerning your compliance with the EEO Special Provisions on the subject contract. Specifically, we find that you have not adequately complied with Section 8 of the special provisions which states that you shall use the best efforts to effect referrals from the unions of minority group employees nor have you complied with the requirements set forth in Form PR-1273 concerning inclusion of these provisions in your procurement of materials over $10,000.

These deficiencies should be corrected and documents indicating the action which you have taken are to be submitted to this office no later than October 25, 1971.

Very truly yours,

F. D. Morgan
Construction Engineer

By D. E. Swan
D. E. Swan
E.E.O. Engineer

RECEIVED
SEP 27 1971
OFFICE OF
STATE HIGHWAY ENGINEER

DES:fw
cc: Emeryville, CA Office
bc: R. E. Simpson
A. E. Johnson
R. L. Schroeder
R. O. Cunningham

Form E-123

RECEIVED
SEP 9 - 1971
FOR FILING

I-405-8(17)303
7276

Salem, Oregon
September 9, 1971

A. E. Johnson
Asst. State Highway Engineer

I discussed on September 8 the Fremont Bridge project with A. A. Kostelic, agent for the General Insurance Company in San Francisco. I find the following:

1. The rumor that the insurance (bonding) agents are shopping for a new contractor is untrue.

2. Murphy Pacific does have a cash flow problem over the next year because of certain internal problems.

3. The insurance people will be in Portland on September 16 and I have arranged a meeting with them in the small conference room here in Salem at 3 p.m. to discuss this matter. Please arrange to be present.

Tom Edwards
Deputy State Highway Engineer

TE:ja

cc R. L. Porter
Ivan Marchant (Please attend meeting)
R. L. Schroeder " " "

RECEIVED
SEP 3 - 1971

OREGON STATE HIGHWAY DIVISION

HIGHWAY BUILDING • • • SALEM, OREGON • • • 97310

September 1, 1971

Murphy Pacific Enterprises
5051 N. Channel Avenue
Portland, OR 97217

Attn: Alex Jeffrey

Re: Fremont Bridge, Stadium Freeway
F.A. Proj. No. I-405-8(17)303
Contract No. 7276

Gentlemen:

To confirm our phone conversation, the Oregon State Highway Division will conduct a compliance review of your Corporation with regard to equal employment opportunity. The date is September 21, 1971 at 1 P.M. in your office on Swan Island.

You and other Corporate officials who are involved with the Corporation's equal employment opportunity policies will be expected to attend. The review will be conducted by D. E. Swan, Oregon State Highway Division. Other representatives from the State and Federal Agencies may attend.

Attached is an outline form which will be used in evaluating your program. You should fill in the information on this form in advance of the compliance review and provide copies of the various exhibits indicated.

We will evaluate your affirmative action efforts concerning equal employment opportunity concerning such items as recruitment, training programs, contacts with minority groups, equal employment opportunity meetings and records.

Very truly yours,

F. D. Morgan
Construction Engineer

By D. E. Swan

D. E. Swan
E.E.O. Engineer

Attachment
cc: Emeryville, CA Office
bc: R. E. Simpson
A. E. Johnson
R. L. Schroeder
R. O. Cunningham

RECEIVED
SEP 1 1971
OFFICE OF
STATE HIGHWAY ENGINEER

Form 6-138

RECEIVED
SEP 2 - 1971
FORM E-30 5M 10-68 SP*23401.734
FOR FILING

I-405-8(17)203
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon
August 26, 1971

To: Mr. Tom Edwards
Deputy State Highway Engineer

SUBJECT: Temporary Suspension of Work Orders
Fremont Bridge Superstructure
Contract No. 7276

In accord with your instructions of August 24, 1971 I have prepared the attached Temporary Suspension of Work Order guide lines for the Fremont Bridge Superstructure.

I have discussed the guide lines with Mr Bill Choate of Murphy Pacific Corporation and we are in substantial agreement that the guide line can be applied.

Please note that the last paragraph states that all calender days; i.e. Saturdays, Sundays and Holidays; are included under guide lines.

9-13-71
Ed Hardt advised to apply Suspension of work order only at request of Contractor. Answer to indicate "Persuant to request, — date is considered a Suspended work day"

NOTED TOM EDWARDS

Respectfully,

R.O. Cunningham
Resident Bridge Engineer

ROC:dgh

cc: I.D. Merchant
R.L. Schroeder

A.E.

NOTED
A.E.

RECEIVED
AUG 27 1971
OFFICE OF
STATE HIGHWAY ENGINEER

OREGON STATE
HIGHWAY DEPARTMENT

SUBJECT: Temporary suspension of work orders on Fremont Bridge Superstructure to comply with National Occupational Safety and Health Standards.

The Occupational Safety and Health Standards, Title 29-Labor, Part 1910 states in part:

> "For example, whenever a standard promulgated under the Contract Work Hours and Safety Standards Act and contained in 29 CFR Part 1518 is applicable to an employment and places of employment by virtue of the performance of a construction contract on a date before August 27, 1971, the corresponding standard prescribed by part 1910.12 of new part 1910 shall also become effective on the same date with respect to such employment and places of employment. However, this effective date provision shall not be deemed to relieve any employer of any duty under section 5(a)(1) of the Act to furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or likely to cause death or serious physical harm to his employees,"

The Fremont Bridge Superstructure becomes a place of hazardous employment in certain weather conditions and therefore the contractor cannot require his men to work. The State of Oregon using a calendar day count for completion of the contract is requiring the contractor to work regardless of the hazard involved. This appears to be in violation of the quoted Occupational Safety Standard. In order to rectify this situation the State of Oregon will write a Temporary Suspension of Work Order under section 8-6 of the Standard Specifications for each day when weather conditions make the working area hazardous.

The following guide lines are set forth to be used to determine which days will be classed as hazardous working conditions:

(1) Any day during which rain, snow, or ice coats the structural steel and the walkways and makes them slippery.

(2) Any day during which the wind blows or gusts with such force as to cause a man, who is standing facing the wind without his feet braced, to stagger backwards.

Rel.

Such rain, snow, ice, and wind must create the hazardous condition during the first three-fourths of the working shift. Any condition which occurs during the last one-fourth of the working shift will be considered as not effecting the safety of the project as most of the employees will be on the ground closing the project for the day.

The above guide will be used to issue Temporary Suspension of Work Orders on the Fremont Bridge Superstructure Contract #7276 after August 27, 1971. Such orders shall be issued for all calendar days after that date until completion of the contract.

RECEIVED
AUG 27 1971
FOR FILING

I-405-8(17)303
7276

Salem, Oregon
August 26, 1971

Fremont Bridge

R. L. Schroeder
Metropolitan Engineer

Hardt has no doubt briefed you concerning the meeting with Jay Murphy of Murphy Pacific Corporation on Tuesday, August 24.

There seems to be only one area (as marked in red on the attached progress schedule) where the job progress could be expedited and I suggest you give all possible attention to this. The reason for delay given at the meeting was that the contractor needed his surety's approval to hire an additional crane to install the center span falsework.

Attachment

Tom Edwards
Deputy State Highway Engineer

TE:ja

cc R. L. Porter (enc.)
A. E. Johnson "
Ivan Merchant "

PROGRESS SCHEDULE - FREMONT ST. BRID

	Apr	May	June	July	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
					1971								
COMPLETE WEST BACK SPAN													
MOVE AND INSTALL FALSEWORK - EAST SIDE													
ERECT EAST BACK SPAN													
LOAD OUT AND SHIP CENTER SPAN													
INSTALL CENTERSPAN FALSEWORK													
ERECT CENTERSPAN ON FALSEWORK													
FLOAT CENTERSPAN IN AND JACK UP													
ERECT CENTER SPAN LOWER DECK													
FORM & POUR LOWER DECK CONCRETE													
EPOXY UPPER DECK													
FIELD PAINTING													

Move up if possible

FREMONT ST. BRIDGE - 8-18-71 EDG

1			1972											
OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Move up if possible

RECEIVED
AUG 10 1971
FOR FILING

I-405-8(17)303
7276

August 9, 1971

Mr. R. E. Simpson
Division Engineer
Federal Highway Administration
P. O. Box 300
Salem, Oregon 97308

Contract 7276
Prefix 626-1013
FAP I-405-8(17)303

Dear Sir:

Herewith for your consideration and approval are copies of Extra Work Order No. 3 covering handling of radiographic equipment on the Fremont Bridge Section of the Stadium Freeway in Multnomah County.

This order covers providing the necessary men and equipment to load and eventually unload radiographic equipment onto the contractor's barge to X-ray tie girder welds. The testing company is not equipped to do this work.

This work was tentatively recommended for approval by the Federal Highway Administration Division Bridge Engineer on June 16, 1971.

Your approval as of June 16, 1971 is requested.

Very truly yours,

R. L. Porter
State Highway Engineer

By
John A. Bond
Construction Administration Engineer

JK:fw

RECEIVED
AUG 5 - 1971
FOR FILING

I-405-8(17)303
7276

August 3, 1971

Mr. R. E. Simpson
Division Engineer
Federal Highway Administration
P. O. Box 300
Salem, Oregon 97308

Contract 7276
Prefix 626-1013
FAP I-405-8(17)303

Dear Sir:

Herewith for your consideration and approval are copies of Extra Work Order No. 2 covering grinding openings in the end bearing anchorages on the Fremont Bridge Section of the Stadium Freeway in Multnomah County.

The openings in the end bearing anchorages which hold the lower end of the end bearing links were installed under a previous contract. These openings are the same size as the pin holding plates, erection of the structure requires that the plates slide in the openings. The openings must be dressed to proper clearance to allow for the movement of the pin holding plates.

This work was tentatively recommended for approval by the Federal Highway Administration Area Engineer July 20, 1971.

Your approval as of July 20, 1971 is requested.

Very truly yours,

R. L. Porter
State Highway Engineer

By

John A. Bond
Construction Administration Engineer

BMW:fw

Form E-[illegible]

I-405-8(17)303
7276

STATE COPY 1 P

OREGON STATE HIGHWAY DEPARTMENT

Order for Extra Work

TO BE PERFORMED ON FORCE ACCOUNT BASIS

APPROVED EFFECTIVE DATE 8-13-71
Contingent upon modification of project agreement if additional funds are required

BY [signature]

TITLE Dist. Engineer

DATE 8-13-71 19 71

FEDERAL HIGHWAY ADMINISTRATION

Project Name Fremont Bridge Superstructure Date 7-29 19 71

Highway Stadium Freeway Contract No. 7276

County Multnomah Prefix 626-1013

Contractor Murphy Pacific Enterprises F. A. Project No. I-405-8(17)303

Address P.O. Box 23007, Oakland, Calif. 94623 Order No. 3

The following work is hereby classified as "Extra Work", to be performed and paid for in accordance with the terms of contract.

Description of work to be done: Provide men and equipment to position radiographic source on tie girder 205 G1L and G1R which are aboard the derrick barge "Marine Boss". Radiographic source has to be loaded aboard Marine Boss, positioned in each end of each tie girder section and then unloaded from the Marine Boss.

Location by station numbers: FB 3 361+89.19 only

Estimate of quantities and cost: Total cost of labor and Material——— $ 2,000.00

METROPOLITAN ENGINEER
RECEIVED
AUG 2 - 1971
ME AME AME MOE MDE MTE

Explanation: (Explain here the conditions which cause this work to be classed as "extra work") The 1,600lb wt. of the radiographic source makes it necessary to hire men and equipment to handle it. The agency which performed the inspection does not have facilities to load, position and unload the source on the barge.

INSTRUCTIONS: A single order should not cover more than one class of work or more than one extra work job.

Submit five copies of the order to Salem. After approval of the order by the assistant state highway engineer, the Salem office will send one copy to the contractor, one to the division engineer and one to the resident engineer.

Project authorization	$24,054,902.30
Present estimate of project cost, including $2,000.00 for work under this order	$23,238,288.74
Expected under-run amount	$816,613.56
Expected under-run per cent	3.5%

Space to Right of this line is for use of Salem Office

Submitted by: R.O. Cunningham
R.O. Cunningham, Bridge Resident Engineer

Approval Recommended: Walter H. Hart
Construction Engineer or Bridge Engineer

Approval Recommended: Edward Eckhardt
Division Engineer

Approved: [signature]
Deputy State Highway Engineer, Assistant State Highway Engineer or Construction Office Engineer.

8-17-71

SD-0391-734

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AUG 10 1971
FOR FILING

I-405-8(17)
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
July 28, 1971

NOTED
A. E. JOHNSON

SUBJECT:

To:

Memo to the File

Weld Investigation
205 GIR
Fremont Superstructure
Contract 7276

Excavation of joint No. 1 on member 205 GIR of the Fremont Bridge superstructure was begun on July 27, 1971. This is the joint attaching the top flange of the ASTM A514 arch rib box to the ASTM A588 bottom flange of the tie girder box.

By the time I arrived on the "Marine Boss" barge at 12:30 on July 27, most of the outboard flange weld on the south end (as constructed) of the joint had been excavated. I was told by our inspectors Rief and Bangert, that the crack which had been visible on the surface had extended about an inch longitudinally into the weld. Mr. Choate of Murphy Pacific later stated the distance was 3/8 inch. Mr. Bangert also saw a small crack which extended into the weld for about 2 inches on the A514 side of the joint. Additional air-arc cutting and grinding failed to show cracking farther along the weld toward the web. Dye penetrant was used between passes to determine if all of the cracks had been excavated.

When I arrived, the root of the weld on the north end of joint 1 had been ground out to about 1/4 inch depth. This excavation showed a slag pocket in the plane of the top surface of the A514 joint, with a crack extending through it. The slag pocket was 3/4 inch from the radius line of the machined A588 plate and was about 1/8 inch in diameter. Subsequent air-arc gouging removed the crack on the A588 side of the weld and demonstrated that the crack on the A514 side of the weld was part of the gap between the A514 and machined A588 plates. The slag pocket was followed for about 5½ inches, at which point the gap between the plates became very tight. On the 28th Mr. Bangert said he thought he could see, at the bottom of the excavation, a small crack extending down at a 45° angle. I had not seen this on the 27th. This will be investigated further.

Ed Rief and I met Ed Hardt and Bob Cunningham at the site at 5:30 pm on the 27th. Additional acid etching and penetrant dye testing was performed, but no other cracks were found in the excavations.
Mr. Chaote arrived at about 6 pm and stated his position:

The excavations demonstrated that sound metal had been deposited in the weld, which was the limit of his responsibility. Any cracking or slag pockets occasioned by the landing of the A514 plate on a lip of the machined A588 plate was a design problem and he would accept no responsibility for this. He would excavate no more welds until a better establishment of the legal position and cost assignment had been made.

Ultrasonic examination of the bottom flange joint 82 of GIL showed two small pockets, one with an indication of -4db, the other with -4db, and extending 1/2 inch into the weld. These were excavated by grinding on the 27th and the ultrasonic indications were confirmed. They were subsequently welded up, except for 1/8 inch corner cracks still visible at 5:30 on the 27th, which were ground out on the 28th.

The radiographs of the four 82 joints were not identified as to which 205 member they were incorporated. Therefore, all six sets of radiographs showing welds of plates "ph" to "pk" were examined to determine if the ultrasonic indications on the report dated July 13, 1971 showed on the film. None of the ultrasonic indications, including the two excavated, showed on the film. The criteria for acceptance of these joints was radiographic quality; the films indicate they should be accepted.

The A514 plate ("py" and "pby") to A588 machined plate ("ph" and "pm") joints, identified on the ultrasonic reports as joints Nos. 1 through 8, have been reviewed to determine the significance of the ultrasonic indications in light of the excavations on the outboard flanges of joint No. 1. When the ultrasonic investigation was first undertaken we realized that it would be difficult to distinguish between reflections from discontinuities associated with the air gap (between the A514 plate and the lip of the A588 plate on which it rested) and any other discontinuities in the welds. Some confidence was placed in full-size drawings purporting to show the weld preparation and indicating a 1/2-inch wide lip on the A588 machined plate, 1/4 inch of which was to be for root opening. It was known that not all of the joint preparations were exactly like this, since some of the joints could be probed to a full 1/2-inch depth with a knife blade. Further confidence in the ultrasonic inspection was generated by our ability to define the visible cracks on each end of joint No. 1.

Radiographs were taken of each of these joints because not all of the original films could be found, and those which were found could not be identified with a specific joint. These films were of some benefit in locating the root of the air gap, though not all air gaps could be identified.

Excavation of each end of joint No. 1 revealed that the visible cracks on the ends of the weld were relatively shallow and blended into slag pockets associated with the air gap. Furthermore, the slag pockets

were actually a full 3/4 to 7/8 inch from the radius line of the machined A588 plate, twice as far as had originally been supposed. Some of the indications on the film were originally suspected of being inclusions in the weld, due to their being an inch or more from the radius line. These are now believed to be slag pockets associated with the air gap. Also, ultrasonic indications found an inch or more from the radius line are now believed to be associated with the air gap. There are also ultrasonic indications in parent metal and possibly some indications from slag pockets which, because of "corner effect" and "mode conversion," give a false indication of the location of the reflector.

Reviewing radiographs, excavations and ultrasonic examinations, I must conclude that the joints should be accepted on the basis of the radiographs.

John C. Jenkins by DLZ

John C. Jenkins
Engineer of Materials & Research

cc: A. E. Johnson
I. D. Merchant
R. L Schroeder
R. O. Cunningham
E. J. Rief
H. A. Schell, Jr.

RECEIVED
AUG 5 1971
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUL 27 1971
FOR FILING

I-405-8(17)303
7:76

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
July 21, 1971

SUBJECT:

To:

Mr. I. D. Merchant
Bridge Engineer

Ultrasonic Inspection
205 GIR & GIL
Fremont Superstructure

On July 20 W. L. Bangert and I ultrasonically re-examined visual indications on the subject members. These were brought to light initially when the joints were acid etched. See attached pictures.

The south end (as constructed) of A 514 joint No. 1 on GIR was again found to have a -2 db maximum indication using our instrument (Krautkramer). Another thought comes to mind as an explanation for the apparent change in sensitivity of this crack. When first examined, it was a fairly cool day. The last two examinations have been on 95° plus days. The heat may have closed the crack somewhat.

Bottom flange joint B1 north, as constructed, exhibited a dark line in the root area of the double V weld, similar to a nonfusion indication. This line does not appear as an ultrasonic reflector, however.

Bottom flange joint B2 contains two obvious discontinuities, one on each side of the groove, and about 1/4 inch from the bottom surface of the plate. One of these is a -4 db reflector, the other is a +4 db reflector. Both extend about 1/2 inch longitudinally into the weld.

In bottom flange joint B3 of GIR, north side, as constructed, there is a +18 db ultrasonic reflector located on the side of the weld at mid plate depth. This indicator extends 1/2 inch longitudinally into the weld.

Similarly, there is a +18 db reflector located in GIR joint B4, south side, as constructed. This also is on the side of the weld at about mid depth, and extends about 1/2 inch longitudinally into the plate.

NOTED
A. E. JOHNSON

RECEIVED
JUL 22 1971
OFFICE OF
STATE HIGHWAY ENGINEER

By ultrasonic examination and by probe, the bottom of the nonwelded groove on A 514 joint No. 2 was found to be 1/2 inch beyond the radius line on the machined A 588 plate. The base line is confirmed as being 4 inches from this line.

John E. Jenkins
Engineer of Materials & Research

cc: A. E. Johnson
R. L. Schroder
R. O. Cunningham
E. J. Rief
H. A. Schell, Jr.

Form E-[illegible]-AM

STATE COPY-IP

OREGON STATE HIGHWAY DEPARTMENT

I-405-8(17)303
1276

APPROVED EFFECTIVE DATE 7-20-71
Contingent upon modification of project agreement if additional funds are required.
BY [signature] Dist. Engineer
TITLE
DATE 8-13-71

Order for Extra Work

TO BE PERFORMED ON FORCE ACCOUNT BASIS

FEDERAL HIGHWAY ADMINISTRATION

Project Name Fremont Bridge Superstructure Date 7-20 19 71

Highway Stadium Freeway Contract No. 1276

County Multnomah Prefix 626-1013

Contractor Murphy Pacific Enterprises F. A. Project No. I-405-8(17)303

Address P.O. Box 23007, Oakland, Calif, 94623 Order No. 2

The following work is hereby classified as "Extra Work", to be performed and paid for in accordance with the terms of contract.

Description of work to be done: The openings in the end bearing anchorages on piers 2W and 2E, are too narrow. It is necessary to enlarge these openings by grinding in order to allow acceptance of plates which hold the lower end of the end bearing links. All work to be done in accord with the Standard Specifications, Special Provisions and Supplemental Standard Specification.

Location by station numbers: FB^3 346+20.50 and FB^3 367+79.50 only.

Estimate of quantities and cost: Total Cost of Labor & Materials ——— $1,000.00

Explanation: (Explain here the conditions which cause this work to be classed as "extra work") The openings in the end bearing anchorages, as installed in the previous contract, are the same dimension as the pin holding plates which fit into the pin. Erection of the structure requires that the plates slide in the openings. There for the opening of the anchorage must be dressed with a grinder for proper clearence. No work has been performed to date.

INSTRUCTIONS: A single order should not cover more than one class of work or more than one extra work job.

Submit five copies of the order to Salem. After approval of the order by the assistant state highway engineer, the Salem office will send one copy to the contractor, one to the division engineer and one to the resident engineer.

Project authorization	$ 24,054,902.30
Present estimate of project cost, including $ 1,000.00 for work under this order	$ 23,236,288.79
Expected under-run amount	$ 818,613.51
Expected under-run per cent	3.57

Space to right of this is for use of Salem Office

Submitted by: [signature] Resident Engineer
R.O. Cunningham, Res. Bridge Engineer

Approval Recommended: [signature] Assistant Division Engineer

Approval Recommended: [signature] Construction Engineer or Bridge Engineer

Approved: [signature] Construction

8/17-71

SP-6301-734

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JUL 20 1971
FOR FILING

I-405-8(17)305
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
July 19, 1971

SUBJECT:

NOTED
A.L. JOHNSON

To:

Mr. I. B. Merchant
Bridge Engineer

Ultrasonic Examination
GIL and GIR
Fremont Bridge Superstructure

Mr. W. L. Bangert and I re-examined joints 1 and 3 on July 17 as you requested. In general we confirmed the examination by Conam Inspection made on June 25. This does not mean that we agreed completely, but in the area where their report shows a major indication, we found a major indication.

In general, the magnitude of the indications we found on the 17th ranged from equal to 8 db less sensitive than those indicated on the 25th. In fact, the crack on the south end (in place) of joint No. 1 was found to be of +2 db sensitivity on July 17 whereas, with our instrument, we found it to be -5 db on the 25th of June. The change in sensitivity of this particular crack might be due to filling of the void with dye and acid, it having been tested with penetrant dye and acid etched on several occasions since the 25th. I have no explanation for the other changes, except the likelihood that two viewers did not see the same defect from identical positions.

The reports of July 17 show more numerous defects because we looked at the weld from both sides. I believe the Conam inspector looked at it from only the downhill side.

Most indications we found on the 17th were relatively insensitive to transducer rotational angle (whether it was perpendicular to the weld axis or at a slight angle to it) and had significant width (the transducer could be moved toward or away from the weld 1/2 inch or more without losing the signal). Signals on the screen were generally single-peaked and tended to be visible from only one side of the weld. These characteristics lead me to believe that the reflectors are long, flat, of significant width and are oriented with the sloping sides of the weld. The types of weld defects which have these characteristics are underbead cracking, lack of fusion and, to a lesser extent slag. Of these three thpes of defects, only alag would likely show on a radiograph of 6-inch thick steel.

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NCER

The nonwelded liO, where the A514 plate meets the A588 machined plate, would not normally be a reflector which would return sound to the transducer. If there were a burn-off bead at the bottom of this groove it would tend to be round and irregular. Reflected signals from it would tend to be small and would be sensitive to transducer angle. Thwy would also indicate a reflector of limited width. Such an indication was that shown on joint 3 from 46¾ to 50 inches.

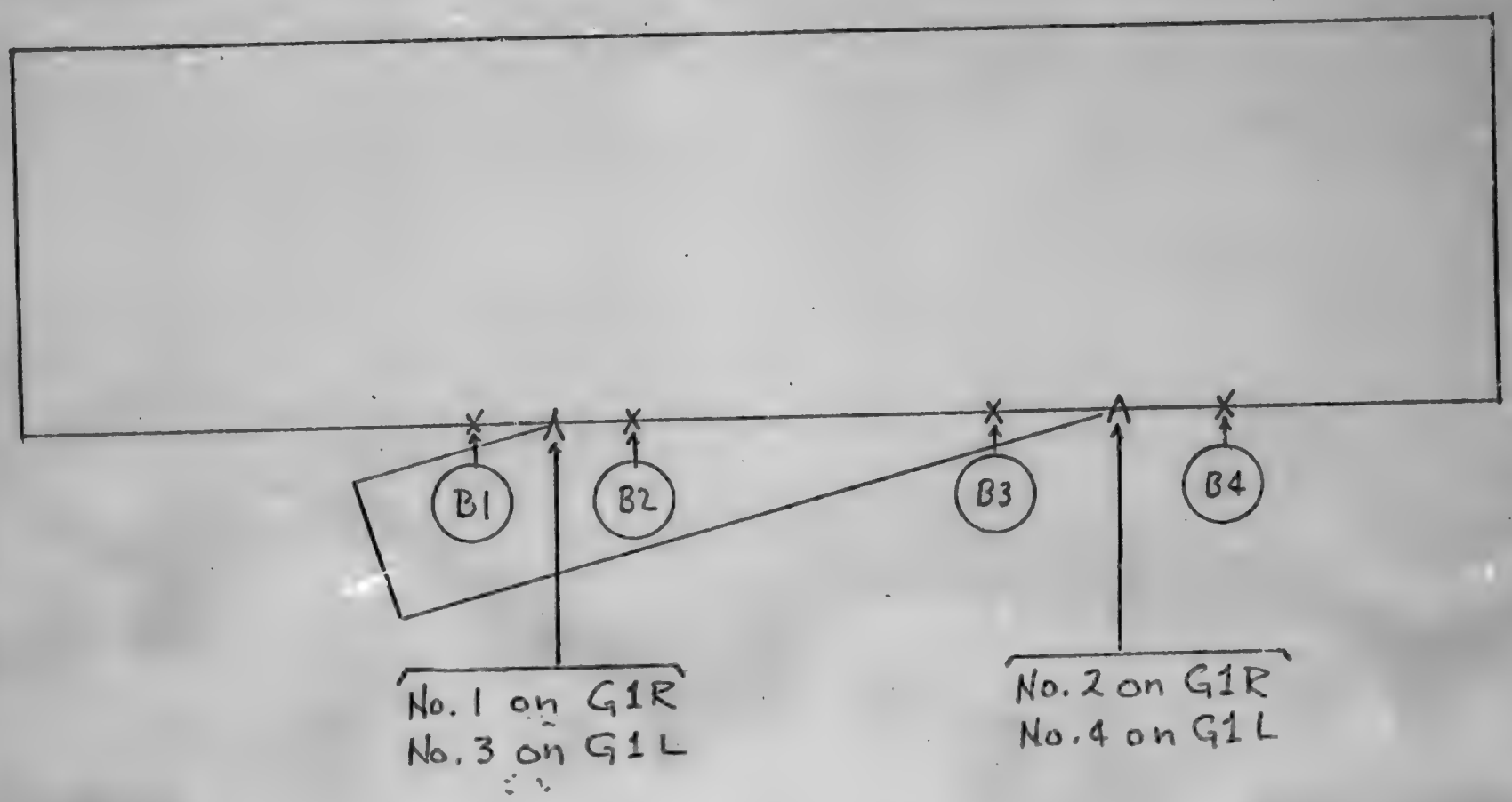
In discussing with Mr. Bangert the removal of these welds by air-arc or grinding, it was felt that this operation could result in bitter words between the welder and inspector. The welder would find it to his advantage to take large cuts and, if possible, to remove evidence of nonfusion or cracking before the inspector could see it. With an air-arc operation in progress, there would hardly be room for the welder and the inspector inside the arch rib box at the same time. The contractor would complain if, after every pass, his welder had to leave the box in oreder to let the inspector in.

In order to insure cooperation of the welder in removing these welds, it might be to the State's advantage to employ the man performing the excavation. The contractor could furnish his own inspector. With this arrangement there might be more incentive to find the reflectors and determine their nature.

John C. Jenkins
Engineer of Materials & Research

cc: A. E. Johnson
R. L. Schroeder
R. O. Cunningham
E.J. Rief
H. A. Schell, Jr.

Key to Ultrasonic Inspection G1R & G1L



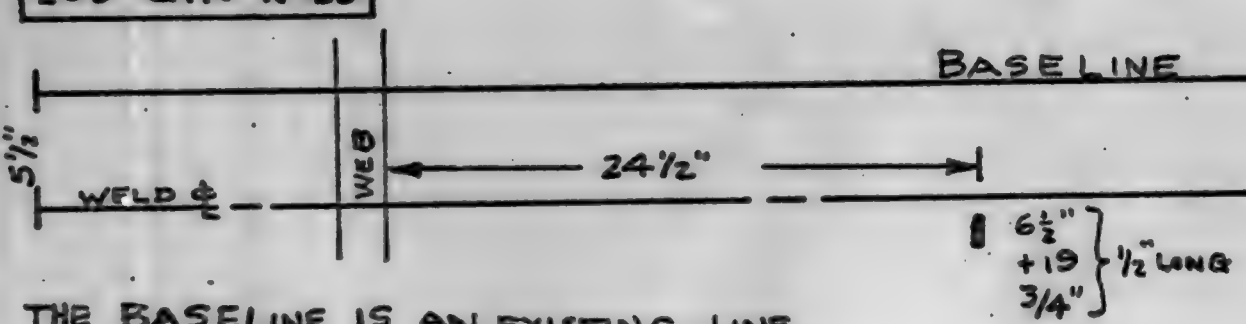
FREMONT BRIDGE
SUPERSTRUCTURE
CONT. 7276

ULTRASONIC RECORD

GIRDER SEE BELOW SPAN PP3 SPLICE BOTTOM FLANGE DATE 7-15-71 ANGLE 60°

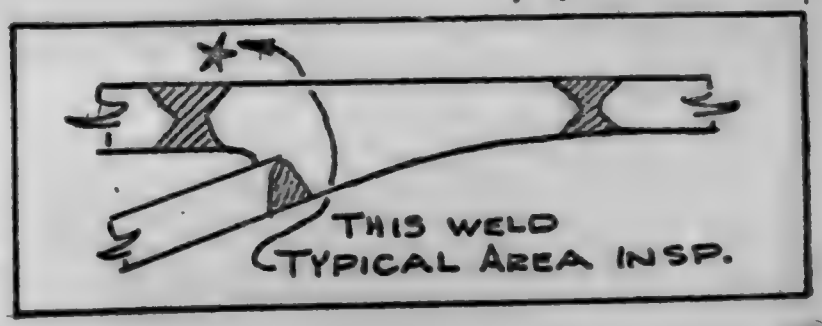
FLANGE ☒ WEB ☐ THICKNESS - FROM 3¼" (2½) TO 3¼" B1 (2½ B3) LAMINATIONS - YES ☐ NO ☒

205-GIR №B3

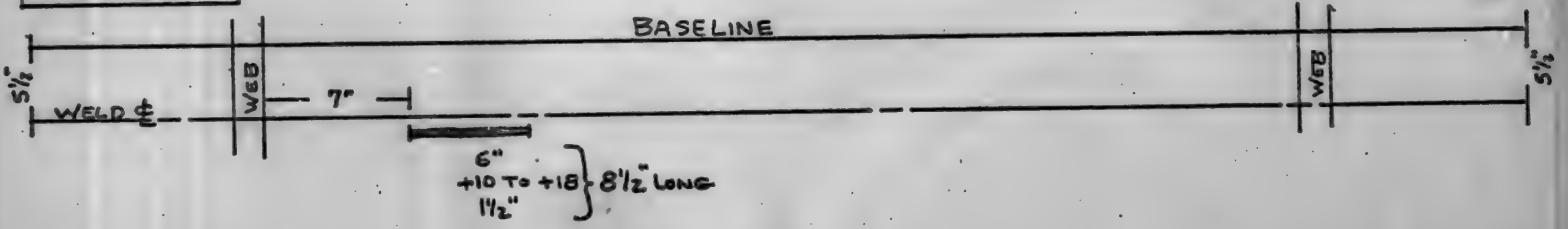


THE BASELINE IS AN EXISTING LINE USED FOR RADIOGRAPH.

KEY: DISTANCE FROM BASE TO DEFECT
SENSITIVITY LEVEL IN db.
DEFECT DEPTH FROM FACE OF ℄ INSP.



205-GIL №B3



205-GIL №B1 AND 205-GIR №B1
SHOWED NO REJECTABLE DEFECTS.

W Bangert

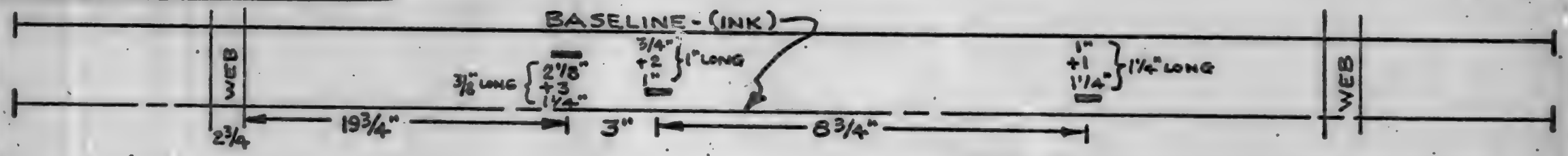
FREMONT BRIDGE
SUPERSTRUCTURE
CONT. 7276

ULTRASONIC RECORD

GIRDER SEE BELOW SPAN PP3 SPLICE BOTTOM FLANGE DATE 7-13-71 ANGLE 60°

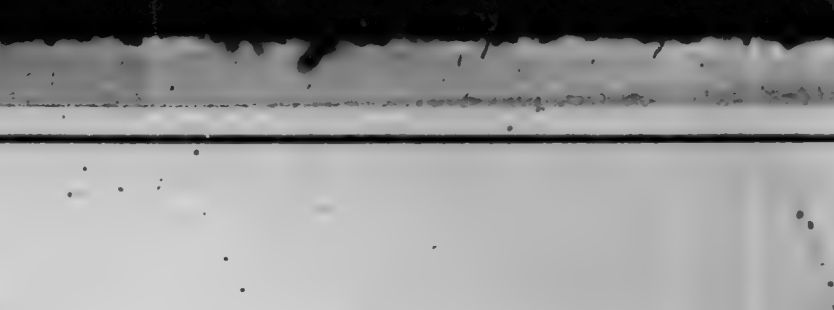
FLANGE ☒ WEB ☐ THICKNESS - FROM 6" TO 2 1/2" LAMINATIONS - YES ☐ NO ☐

205-GIL-MK Nº B2

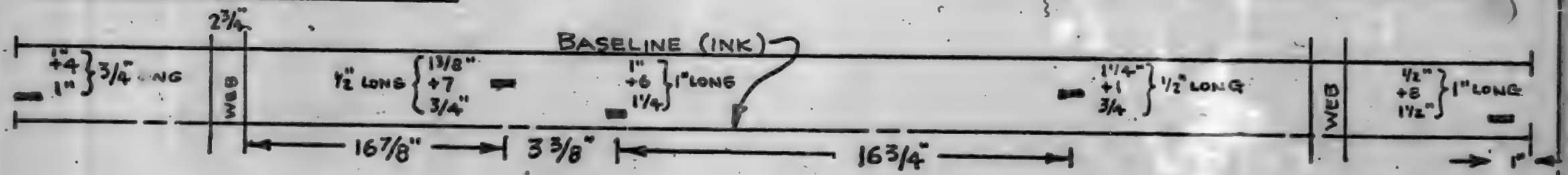


* NOTE: BASELINE IS @ THE WEST EDGE OF THE WELD.

KEY: DISTANCE FROM BASE TO DEFECT
SENSITIVITY LEVEL IN DB.
DEFECT DEPTH FROM FACE OF ℄ INSP.



205-GIR MK Nº B2



205-GIL Nº B4 , AND 205-GIR Nº B4
SHOWED NO REJECTABLE DEFECTS.

RESULTS OF ULTRASONIC INSP. BY CON-AM INSP. JIM BARR AS WITNESSED BY W.L. BANGERT. CALIBRATION TO BPR SPECS.

Fremont Superstructure

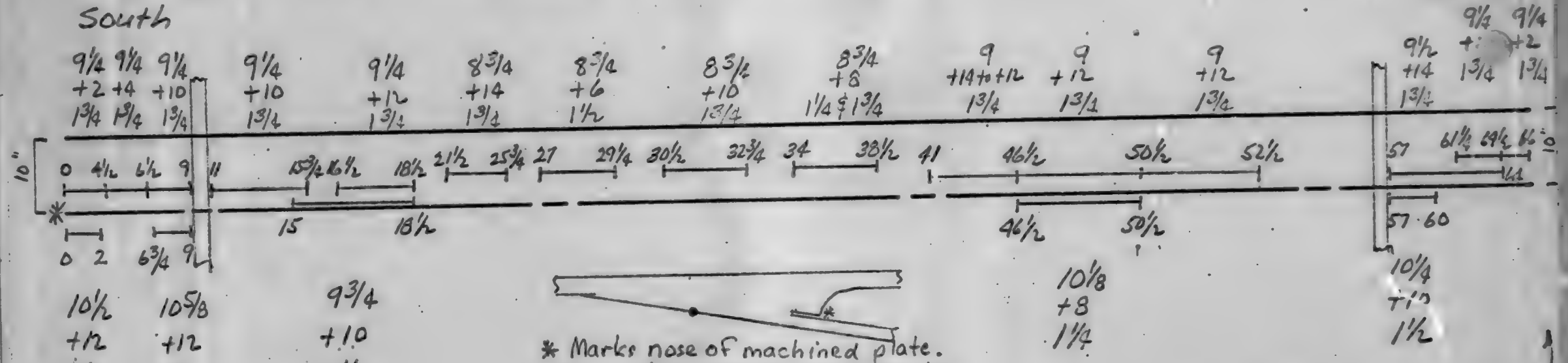
Kroutkramer Instrument

ULTRASONIC RECORD

GIRDER G1R SPAN 205 SPLICE 1 DATE 7/17/71 ANGLE 60°

FLANGE ☒ WEB ☐ THICKNESS - FROM 13/4 TO 6 LAMINATIONS - YES ☐ NO ☒

South



North

4 Visible crack in end of weld

* Marks nose of machined plate. Nonwelded groove is too tight to probe and determine depth.

• Marks base line 10" from *.

Visible crack in end of weld

Note: "North" as indicated above, is the final direction as constructed. The pieces actually are marked "north" as they lie on the barge, which is the opposite of the above.

J. Jenkins
W. Bongert

Fremont Superstructure

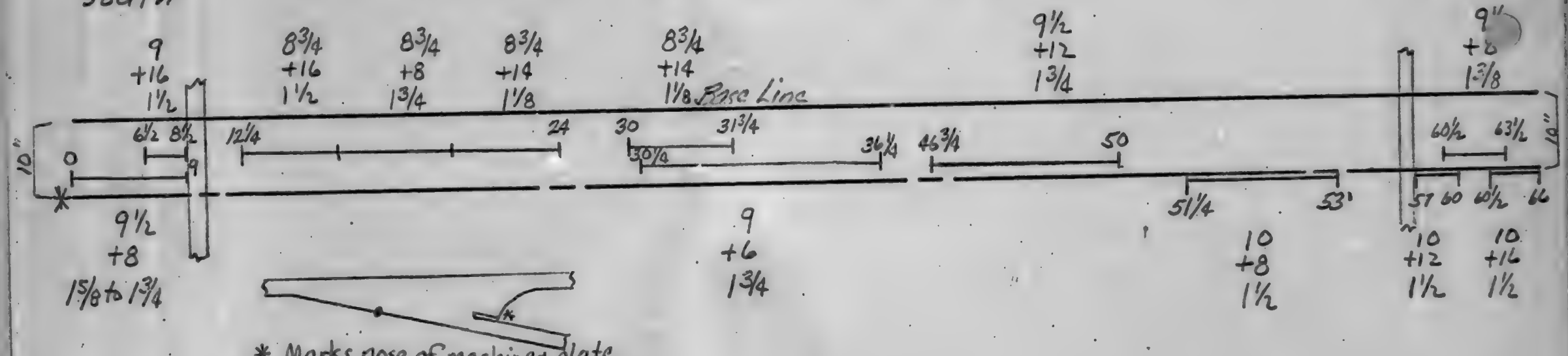
Krautkramer Instrument

ULTRASONIC RECORD

GIRDER G1L SPAN 205 SPLICE 3 DATE 7/17/71 ANGLE 60°

FLANGE ☒ WEB ☐ THICKNESS - FROM 13/4 TO 6 LAMINATIONS - YES ☐ NO ☒

South



North

* Marks nose of machined plate. Nonwelded groove generally too tight to probe depth. However, at end "North" above, appears to be 1/2" deep.

• Marks base line 10" from *.

Note: "North" as indicated above, is the final direction as constructed. The pieces actually are marked "north" as they lie on the barge, which is the opposite of the above.

J. Jenkins
W. Bangert

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JUL 19 1971
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OREGON STATE HIGHWAY DIVISION

I-405-2(12)326
7276

HIGHWAY BUILDING • SALEM, OREGON • 97310

July 16, 1971

Murphy Pacific Enterprises
4300 Eastshore Highway
Emeryville, California 94608

NOTED
A.E.

Attention Mr. Jack Geer
Project Engineer

Gentlemen:

Fremont Bridge Superstructure
Contract 7276

This is to confirm our telephone conversation of this morning relative to welded fabrication on the Fremont Bridge Superstructure. As a result of a visually observable crack in the single "V" butt weld joining the top arch rib flange plate to the machined junction piece on girder 205-G1R, an extensive non-destructive testing program has been carried out by the State.

At this time it has been determined that the single "V" butt weld mentioned above connecting the top arch rib flange to the junction piece on girder 205-G1R is not acceptable and must be removed in its entirety and replaced.

Specifications do not permit acceptance of any cracked weld. As mentioned above, on this particular weld there is a visible crack at the vertical face of the top flange, this crack extending at least nine inches into the plate. Non-destructive tests indicate that the balance of the joint is either cracked or has non-acceptable properaties in the root of the weld.

Please furnish us with your method of repair and advise when this work will be accomplished so that the steel erection schedule can be maintained. At this time we are not able to advise

you as to the status of repairs on any of the other arch rib connections to the machined junction pieces but will advise you at the earliest possible time upon completion of the removal of the above-mentioned non-acceptable weld.

Very truly yours,

R. L. Porter
State Highway Engineer
By

Ivan D. Merchant
Bridge Engineer

IDM:dh

cc A. E. Johnson
Federal Hwy. Adm., Attn. H. A. Schell
Parson, Brinckerhoff, Quade & Douglas, Attn. L. G. Silano

bc John Jenkins
R. L. Schroeder, Attn. Ed Hardt
R. O. Cunningham

NOTE: No determination has been made as to the responsibility for the expense of repairing the above-mentioned joint or possibly joints. The Resident Engineer should keep track of time and equipment during the repair to verify any claim that we may be subject to. During the removal of the existing weld someone from the Materials Section should be present so that the results of the ultrasonic tests can be verified against the actual weld defects.

RECEIVED
JUL 16 '71
OFFICE OF
STATE HIGHWAY ENGINEER

OREGON STATE HIGHWAY DEPARTMENT
FORM E-280 (REV. 2-68)

TO: A. E. Johnson

SUBJECT: Vinyl Paint Thinner

FROM: J. C. Jenkins

DATE: 7/15/71

Vinyl paint being applied at Murphy Pacific is being thinned with Mobil 7-T-15, which is supposed to be composed of 56.5 % MEK and 43.5 % aromatic hydrocarbons. A sample was taken for analysis by this laboratory. Because of its volatile nature the sample was sent by express.

The PTL inspector commented on a long term loss of volatiles which resulted in a thinner vinyl coat 2-3 weeks after application than 24 hr after application. He thought this loss might be as much as 1 mil.

cc: R.O. Cunningham

(SIGNATURE)

PLEASE REPLY HERE

RECEIVED
JUL 16 1971
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
A. E. JOHNSON

(DATE) (SIGNATURE)

1. SENDER DETACH SHEET NO. 2 AND HOLD UNTIL REPLY IS RECEIVED. FORWARD SHEETS 1 AND 3 INTACT WITH CARBONS.
2. ADDRESSEE REPLY, DETACH CARBONS AND RETURN SHEET 3 TO SENDER. RETAIN SHEET 1.

RECEIVED
JUL 19 1971
FOR FILING

OREGON STATE
HIGHWAY DIVISION
METROPOLITAN SECTION
5821 N. E. Glisan Portland, Oregon 97213 Phone 229-6971

I-405-8(17)303
72-76

July 12, 1971

Murphy Pacific Corporation
4300 Eastshore Highway
Emeryville, California 94608

NOTED
A. E. JOHNSON

Re: Fremont Bridge

Gentlemen:

It has been decided to change the color of the steelwork of the Fremont Bridge and its approaches to Celadon Green as portrayed by Glidden's color chip G-125. Please take the necessary steps to change the vinyl finish coat to this color and advise if there will be any extra costs generated by this change.

You have previously been advised that we have recently noticed discoloration of vinyl paint applied on the approach projects which has had a southern exposure. This condition will not be tolerated and you are hereby cautioned to do whatever is necessary to insure that the finish coat as described above will be color-fast.

Very truly yours,

R. L. Schroeder
Metropolitan Engineer

By:

ORIGINAL SIGNED BY EDWARD L. HARDT

Edward L. Hardt
Assistant Metropolitan Engineer

ELH:pb

cc: A. E. Johnson
Ivan Merchant
John Jenkins
Robert Cunningham

RECEIVED
JUL 19 1971
FOR FILING

OREGON STATE HIGHWAY DIVISION

METROPOLITAN SECTION
5821 N. E. Glisan Portland, Oregon 97213 Phone 229-6971

I-405-8(17)363
1276

July 12, 1971

Murphy Pacific Corp.
4300 Eastshore Highway
Emeryville, California 94608

NOTED
A. E. JOHNSON

ATTENTION: E. D. Geer

Re: Fremont Bridge Superstructure
Contract No. 7276

Gentlemen:

Your letter of June 18, addressed to Mr. A. E. Johnson relative to movements of the Marine Boss to clear Port of Portland shipping has been referred to me.

As set forth in Mr. Cunningham's letter of June 2, this question has been reviewed by our Salem staff including legal representation and as a result, the Highway Division does not feel that you have a proper claim against the State of Oregon.

This being the case, if you wish to press the question, you should present your reasons for extra compensation together with actual cost figures and backup documentation at the conclusion of the work in the form of a claim against the State of Oregon.

RECEIVED
JUL 14 1971
OFFICE OF
STATE HIGHWAY ENGINEER

Very truly yours,

R. L. Schroeder
Metropolitan Engineer

By:

ORIGINAL SIGNED BY EDWARD L. HARDT

Edward L. Hardt
Assistant Metropolitan Engineer

ELH:pb

cc: A. E. Johnson
Ivan Merchant
Robert Cunningham

MURPHY PACIFIC CORPORATION
4300 EASTSHORE HIGHWAY . EMERYVILLE . CALIFORNIA 94608

June 18, 1971

Oregon State Hiway Division
Highway Building
Salem, Oregon 97310

Attention: Mr. A. E. Johnson

Dear Sir:

We are in receipt of Mr. Cunningham's letter of June 2, 1971 concerning the movement of the marine boss to clear port docking. As you are aware we discussed the potential damages that we might suffer if we were required to move the marine boss during any of our scheduled work days. To date we have had to remove the boss from location so as to interfere with the progress of our work on three different occasions.

We request that consideration be given to this without requesting compensation under article 9-6 of the specifications. Our cost for loss of the marine boss and crew amounts to $5,810.00 a day and we would request that the completion of the contract be extended by 3 days to cover the interference to date.

Yours very truly,

MURPHY PACIFIC CORPORATION

E. D. Geer
Projects Manager

cc: Mr. R. O. Cunningham

EDG:ao

RECEIVED
JUN 21 1971
OFFICE OF
STATE HIGHWAY ENGINEER

TELEPHONE (415) 653-1717
CABLE ADDRESS "MYPAC"

MAILING ADDRESS
POST OFFICE BOX 23007
OAKLAND, CALIFORNIA 94623

RECEIVED
JUL 19 1971
FOR FILING

I-4(5)-S(11)
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

July 12, 1971
Salem, Oregn

RECEIVED
JUL 19 1971
OFFICE OF
STATE HIGHWAY ENGINEER

SUBJECT:

To:

Mr. I. D. Merchant
Bridge Engineer

NOTED
A. E. JOHNSON

Fremont Bridge
Contract 7276
Steel Inspection

The following is an account of my trip to the Murphy Pacific plant at Richmond, California to ultrasonically test joints where the landside arch rib attaches to the bottom of the tie girder. Investigation of the direction of rolling of the machined ASTM A588 junction plates and the bottom shoe casting were also undertaken.

On arriving in Oakland I was told by Mr. Ed Cockrill of PTL that their ultrasonic inspector was in Los Angeles and therefore PTL had hired Mr. H. Al Hurt of X-ray Testing Services to perform the inspection. PTL had not used this company before so Mr. Ralph Mikus would be out, when work began on the 8th, to check the inspector out. I had hoped that the inspector would have the evening of the 7th to review the 1970 OSHD ultrasonic specifications (contained in the welding standards), but this was not possible.

I met with Mr. Hurt the next morning at 9 a.m. at the plant to explain the problem. Mr. Hurt has had about 11 years of ultrasonic experience, some of it with the Atomic Energy Commission, but no experience with the FHWA ultrasonic specification, upon which our specification is based.

The joints were examined and laid out on the surface of the steel. Base lines were established to facilitate the inspection. After looking for an hour at the first 18 inches of the first joint, Mr. Hurt said he really didn't know what he was looking at and urged that radiographs be taken before proceeding with the ultrasonic inspection. This was agreeable with representatives of PTL and FHWA present, so ultrasonic work was discontinued.

Arrangements were made for PTL to begin radiographing the joints in question at the Murphy Pacific plant and this work should be completed by Monday morning. By the evening of the 8th arrangements had been started to have Conam Inspection in Portland perform radiography on the A 514 steel joints before Monday and ultrasonic inspection of the A588 joints by the 14th of July.

I plan to return to Murppy Pacific on Monday to complete the ultrasonic inspection of A514 and A588 joints there by the 14th.

During a preliminary meeting with Messrs. Tony Dias and Gus Spriz of Murphy Pacific Mr. Dias said that all documents relating to the welding procedure and material layout were at their Emeryville plant under the control of Mr. Jack Geer, who was then in Portland. However, Mr. Spriz stated that the A588 machined junction plates were cut from U. M. plates whose width was the longitudinal length of the piece as placed in the structure. In other words, the grain is transverse to the direction of primary stress in the flange.

Mr. Dias stated that, as he understood it, the fabrication procedure for this section was:

1. Weld 3¼" flange plates to machined plates.
2. Stress relieve unit.
3. Weld 1¾" top flange of arch rib to machined plate.
4. Assemble webs and bottom flange of arch rib.
5. Place 3-sided arch rib box on inverted tie girder flange and
    a. Weld arch webs to arch box top and tie girder flange.
    b. Weld arch rib bottom flange to machined plate.

Mr. Walt Nystrom, inspector for PTL who worked on this section, stated that procedures 5a and 5b were reversed. The bottom flange was attached first and then the large arch web to tie girder flange welds were made.

Mr. Nystrom took Mr. Herb Schell and me to the Bethlehem plant in San Francisco where we looked at the top and bottom shoe castings being machined. Mr. Nystrom explained the ultrasonic inspection by X-ray Engineering Company. In addition to the work described on the report by this company dated June 25 and June 28, 1971, Mr. Nystrom stated that ultrasonic examinations had been made from virtually all of the machined surfaces on the top, bottom and ends of the piece. No defects were found, other than the 1/4" gas hole described in the report. (The cast steel between two machined surfaces was utilized for sound velocity-distance-calibration and a standard hole in a block of 4130 steel was used for defect size calibration).

The problem with the bottom casting now concerns a depression in the throat under the pin. For some reason the throat undercuts the pin seat by about 1/2", average, in each end, with a 3/4"x1" hole in one end. This undercut extends 15" in one direction from the centerline of the pin and 3" in the other direction. The end web is thicker than specified, being 6 5/8" to 6 3/4" thick on one end and 6 3/8" to 6 1/2" thick on the other end. The boss shown on the face of the web is actually a countersink.

Due to the mass of the casting and the extreme difficulty in getting a welder into the area which needs to be built up, I question the advisability of trying to make this repair. I believe the designer should be questioned as to the significance of the undercut in the throat, in view of the extra mass in the end webs.

John C. Jenkins
Engineer of Materials & Research

cc: A. E. Johnson
R. L. Schroeder
R. Cunningham
H. A. Schell

RECEIVED
JUL 13 1971
FOR FILING

I-405-8(17)303
7276

July 12, 1971

Andersen-Hannan
Post Office Box 13267
Portland, OR 97213

Drake-Willamette
1201 N. Loring
Portland, OR 97227

Gentlemen:

Enclosed is a copy of a report by Harlan Associates, Inc. concerning variations in film thicknesses of inorganic zinc coatings applied to portions of the East and West Fremont Interchange Sections of the Fremont Bridge in Portland. These copies are being furnished to you at the request of Mr. Franklin Drake in order that you may have an opportunity to go over them prior to our scheduled meeting on July 21.

As a matter offair play, it is requested that you furnish me with a copy of Can Test's report concerning the same subject prior to our meeting.

Very truly yours,

R. L. Porter
State Highway Engineer

By

A. E. Johnson
Assistant State Highway Engineer

AEJ:ms
Att.
cc R. L. Porter
Tom Edwards
I. D. Merchant
Ed Hardt/att

HARLAN *Associates, Inc.*

PAINT RESEARCH LABORATORY
11 DUBOCE AVENUE - SAN FRANCISCO, CALIFORNIA 94103
621-7245
AREA CODE 415

30 June 1971

Our File: P-5711

AIRMAIL

This report is p[illegible] the confidential property of our c[illegible]. For our mutual protection, authorization for publication in any manner is received pending our written consent.

Department of Transportation
Highway Division
138 State Highway Building
Salem, Oregon 97310

Attention: Mr. A. E. Johnson, Assistant Highway Engineer

Gentlemen:

1. This report covers observations, examinations and tests completed to date with regard to variation in film thicknesses of inorganic zinc coatings applied to portions of the East and West Fremont Interchange Sections of the Fremont Bridge, Portland, Oregon.

2. The writer observed the metal preparation and painting procedures in operation 6 April 1971 at Canron Plant II in Vancouver, B.C.

2.1 Blast removal of rust, mill scale and debris from the surface of the girder appeared satisfactory.

2.2 The paint was spray applied. During our observation, a coat of Rust-Ban 193 was applied, the film thickness checked by a wet gage, and an additional coat of Rust-Ban 193 immediately applied while the first coat was still wet. No sagging or running of the coating was noted.

2.3 Inspection of application of the 6851 curing accelerator was difficult because of the saturation of the air with acid spray: however, observation of a portion of a curing agent treated girder during a "Coffee Break" period, indicated the 6851 was being applied to achieve a full wet coat. The full wet coat application of 6851 curing accelerator was later confirmed verbally by Mr. John Wulf of Corrosion Coatings Ltd.

AFFILIATIONS: National Paint, Varnish and Lacquer Association . . . Federation of Societies for Paint Technology . . . American Chemical Society . . . American Society for Testing and Materials . . . American Institute of Chemists . . . Air Pollution Control Association . . . American Oil Chemist's Society . . . Forest Products Research Society . . . International Science Foundation . . . Technical Association of the Pulp and Paper Industry . . .
Registered Chemical Engineer, State of California

... is the property of ... Council for ... project ... publication in any manner is reserved pending our written consent.

2.4 Film thicknesses were measured on a Rust-Ban primed and 6851 post cured treated girder marked D9T, while the girder was still under cover in the blasting and coating shed. Film thicknesses ranged from 3.0 to 3.5 mils when examined by a Tooke gage.

2.4.1 Girder D9T was then moved out of the shed into a moderately heavy rain. Bubbling of the surface was observed where wetted by the rain: however, laboratory tests indicate a bubbling action of water wetted Rust-Ban 193 occurs whether the Rust-Ban 193 has been post cured or not and is, in our opinion, a result of displacement of the air trapped within the pores of the highly porous Rust-Ban 193 coating.

2.5 Girder A3L, mounted on a barge in Vancouver was examined for film thickness using a Tooke gage. A film thickness of 4.5 mils was observed in Vancouver on 6 April 1971. The same Girder was examined in Portland (still barge mounted) on 15 April 1971 and no film thickness change was noted. The time differential, in our opinion, was too short to allow any meaningful conclusions to be made with regard to loss of zinc.

2.5.1 The coating on a section of barge mounted Girder A2L wetted by rain was found to be soft and easily removed by scraping in comparison with other girder coated areas also wetted with rain. The same area was checked again in Portland and found to be hard and adherent (coating dry at time of 15 April 1971 Portland examination). Duplication of a similar condition has not been possible in this laboratory to date.

2.6 Mr. Dale Davies of Canron and the writer examined panels prepared by Can Test Ltd. in conjunction with Canron and exposed to the elements near the beach in Vancouver. Mr. Davies stated that no loss of film thickness had been observed in the 14 to 21 day period the panels had been exposed. The coating on the panels was hard and adherent.

3. The writer's observations at Canron Plant II made in Vancouver 6 April 1971, discussions with Mr. John J. Wulf of Corrosion Coatings, Ltd., sandblasting and paint contractor on job at Canron and Pittsburgh Testing laboratory Report dated 26 March 1971 resulted in our laboratory's adoption of the following laboratory test panel preparation procedure.

3.1 Steel panels were sandblasted to a blast pattern of approximately 0.5 mil and coated with Rust-Ban 193 applied by spray to achieve a dry film thickness of 3 mils minimum. Panels were allowed to dry for 4 hours at 70° F. and 50-60% relative humidity.

HARLAN Associates, Inc.
PAINT RESEARCH LABORATORY
11 DUBOCE AVENUE - SAN FRANCISCO
CALIFORNIA 94103

3.1.1 Film thicknesses of the coated panels were measured and a series of panels treated with Enjay 6851 Curing Accelerator. The accelerator was applied at 400 square feet per gallon (the application rate indicated by Mr. Lawry as used at Canron) and 260 square feet per gallon (the value determined in this laboratory as required to achieve a full wet coat application of Curing Accelerator when applied to Rust-Ban 193, 3 mils minimum dry film thickness). The Curing Accelerator treated panels were allowed to dry one hour, film thicknesses again measured and a series of panels consisting of one panel without Curing Accelerator, one panel with Curing Accelerator applied at 400 square feet per gallon and one panel with Curing Accelerator applied at 260 square feet per gallon were subjected to the following tests.

3.1.1.1 Weathering by acceleration, Federal Test Method 141a, Method 6151.

3.1.1.2 Continuous water spray, ambient temperatures.

3.1.1.3 Alternate cycles of water spray (8 hours at 40° F.) and storage at 16 hours dry storage at 40° F. During weekend periods, the panels were continously stored at 40° F.

3.1.1.4 Salt Fog, ASTM B-117.

3.1.1.5 One series of panels was stored at ambient temperature and humidity as controls.

3.2 At the conclusion of the test period, the panels were allowed to recover for a period of four hours at 70° F. and 50-60% relative humidity prior to measuring of film thicknesses.

3.3 Results to date indicate the following:

3.3.1 With regard to the control panels application of the Curing Accelerator increases the apparent film thickness of the coating by +0.1 to +0.5 mil dependent upon the amount of Curing Accelerator applied. Eighteen hours after application and four weeks after application the apparent film thickness change determined for control panels is $\pm$ 0.1 mil.

3.3.2 After 400 hours of weathering by acceleration, in our opinion equivalent to one year exterior exposure, apparent film thickness variations are: no Curing Accelerator, -0.2 mils; 400 square feet per gallon Curing Accelerator, -0.2 mils; 260 square feet per gallon Curing Accelerator, -0.3 mils.

3.3.3 Continuous water spray, ambient temperature, three weeks exposure: no Curing Accelerator, -0.4 mil; 400 square feet per gallon Curing Accelerator, -0.2 mil; 260 square feet per gallon Curing Accelerator, -0.5 mil.

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PAINT RESEARCH LABORATORY
11 DUBOCE AVENUE - SAN FRANCISCO
CALIFORNIA 94103

3.3.4 Cold water spray and storage cycling, three week exposure: no Curing Accelerator, -0.3 mil; 400 square feet per gallon, -0.3 mil; 260 square feet per gallon, -0.5 mil.

3.3.5 Salt Fog exposure, 250 hours: no Curing Accelerator, -0.4 mil: 400 square feet per gallon Curing Accelerator, -0.4: 260 square feet per gallon Curing Accelerator, -0.3 mil.

3.4 Measurements were made by micrometer, loose zinc corrosion products removed prior to measuring.

4. In our opinion, application of Enjay Rust-Ban 193 in a continuous film at a dry film thickness of 3 mils minimum and post cured with Enjay Curing Accelerator 6851 as per paragraph 3.1 above, will yield a rust inhibitive coating resistant to adverse weather conditions. A maximum change in film thickness of -0.5 mil has occurred for panels subjected to accelerated aging tests and, in our opinion, represents the maximum average change in film thickness that may occur between new and aged, properly applied and post cured, Rust-Ban 193 when exposed to the elements for a period of six to twelve months.

Respectfully submitted,

H. R. Harlan Jr.

Harold R. Harlan Jr., Technical Director

HARLAN ASSOCIATES, INC.

HRHJr:mp
Orig. & 2cc

HARLAN Associates, Inc.
PAINT RESEARCH LABORATORY
11 DUBOCE AVENUE - SAN FRANCISCO
CALIFORNIA 94103

RECEIVED
JUL 12 1971

FOR FILING

I-405-8(17)303
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
July 9, 1971

SUBJECT:

To:

Mr. E. S. Hunter
Asst. State Highway Engr.

Fremont Bridge
Contract 7276
Steel Inspection

On July 1, 1971 Mr. Ivan Merchant requested and received authorization for me to go to the Murphy Pacific plant at Richmond, California for the purpose of supervising ultrasonic inspection of welded joints at Panel Point 3. I was to leave on July 7 and return on July 9.

Because of personnel and ultrasonic interpretation problems, the inspection was not completed as planned and I returned on July 8. Radiographs, which were to have been taken after the ultrasonic inspection, are now being taken. The inspection agency, Pittsburgh Testing Lab, plans to resume ultrasonic inspection Monday, July 12 with different personnel and after the radiography is complete.

Mr. Merchant feels it imperative that the ultrasonic inspection be performed under my direction. Therefore I request authorization to go to Richmond on July 12. The work should be completed late on July 13 and I would return to Salem July 14.

Estimated costs are:

Round trip air fare	$96.00
Meals	16.50
Lodging	24.00
Limousine & Misc.	15.00
	$151.00

NOTED
E. S. HUNTER

John C. Jenkins
Engineer of Materials & Research

cc: A. E. Johnson
I. D. Merchant

APPROVED
DEPUTY STATE HIGHWAY ENGINEER
Date 7/9/71

copies to Stacy
7-9-71 Jenkins
Florence
Jean

RECEIVED
JUL 2 - 1971

FORM 6-30
FOR FILING

I-405-8(17)363
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
July 1, 1971

To:

SUBJECT: Fremont Bridge
Contract 7276
Steel Inspection

Mr. A. E. Johnson
Assistant State Highway Engineer

B U I L D I N G

Permission is requested to send Mr. John Jenkins, our Materials Engineer, to the Richmond, California plant of Murphy Pacific to oversee some non-destructive tests on two sections of the Fremont Bridge superstructure. This trip would originate on July 7 and terminate on July 9.

Estimated cost of the trip is $141.50 which would be chargeable to the engineering on the project.

I believe this is a necessary trip to verify the quality of the particular fabricated pieces and should be done as soon as possible to avoid delays to the contractor's operations.

Ivan D. Merchant
Bridge Engineer

IDM:dh

cc John Jenkins

Approved
7/1/71

Dr't to files
cy to Merchant
Jenkins
Jones
7-1-71

RECEIVED
JUN 29 1971
FOR FILING

I-405-5(17)203
7276

OREGON STATE HIGHWAY DIVISION

METROPOLITAN SECTION
5321 N. E. Glisan Portland, Oregon 97213 Phone 229-6971

June 25, 1971

Murphy Pacific
P. O. Box 32007
Oakland, California 94623

Re: Fremont Bridge
Contract No. 7276

Gentlemen:

Vinyl paint supplied to the Fremont Bridge Approach Contractors by Enjay Chemical Company is showing a tendency to discolor. This paint has been in place for a maximum time of three months and the discoloring areas are those with southern exposure. Preliminary investigation by the State's laboratory indicates that this problem may be caused by the Ketone solvents and organic toners used in the paint manufacture. The paint was thinned in the field with MEK.

To the best of our knowledge none of the vinyl top-coat applied under your contract has exhibited this discoloration although, for the most part, it has not had the exposure to the sun that the Enjay paint has. Needless to say, vinyl paint which discolors is not acceptable to the State. The purpose of this letter is to inform you of the condition described above with a request that you relate same to your paint supplier to the end that this discoloring does not occur with Mobil's vinyl as this could not be tolerated.

Very truly yours,

NOTED
A. E. JOHNSON

R. L. Schroeder
Metropolitan Engineer

By:

Edward L. Hardt
Assistant Metropolitan Engineer

ELH:pb
cc: A. E. Johnson
Ivan Merchant
John Jenkins
R. O. Cunningham

RECEIVED
JUN 28 1971
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUN 24 1971
FOR FILING

(Form FHWA-121 (12-67))
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

I-405-8(17)303

TO : Mr. R. L. Porter, State Highway Engineer
Salem, Oregon

7276

DATE: June 22, 1971

In reply refer to: 08-35-DA

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon I-405-8(17)303
Fremont Bridge Section
Stadium Freeway
Superstructure

The Area Engineer's June 17 inspection report indicates Unsatisfactory progress on this project. Approximately 80% of the prescribed time has elapsed with only 42% of the work completed. The report further states that anticipated time extensions are not expected to cover the total overrun in time. Project documents indicate that the resident engineer has advised the contractor of the progress deficiencies.

cy Merchant
Schroeder 6-24-71

NOTED
TOM EDWARDS

RECEIVED
JUN 23 1971
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

GPO 910.222

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JUN 15 1971
FOR FILING

I-405-8(17)062
7276

To:

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

June 10, 1971

NOTED
A. E. JOHNSON

SUBJECT: Deck Sealant
East Fremont Intch., Contracts 7310,11 & 12
West Fremont Intch., Contract 7214
Fremont Bridge, Contract 7276

Mr. R. L. Schroeder
Metropolitan Engineer

METRO

Attention Mr. Edward L. Hardt
Metro Bridge Const. Engr.

Approval has been received from the Federal Highway Administration to place a linseed oil deck sealant on the subject structures. I am enclosing a copy of the specification for this deck sealant treatment.

Also attached is a copy of the contract revision authorization form in which the Federal Highway Administration's approval of this contract revision is indicated.

Walter J. Hart
Bridge Administration Engineer

WJH:dh
Enclosures

cc A. E. Johnson
A. A. Rear
H. A. Schell, Jr.

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JUN 11 1971
FORM E-20 (12-67)

FOR FILING

I-405-8(17)3[illegible]
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
June 9, 1971

To: Mr. Robert O. Cunningham
Resident Bridge Engineer
5821 N. E. Glisan
Portland, Oregon 97213

SUBJECT: Fremont Bridge
Stadium Freeway
Contract No. 7276
Lab. Nos. 961411, 961412, 962789

NOTED
A. E. JOHNSON

The vinyl paint reported under the Laboratory Numbers 961411, 961412 and 962789 were not rejected by the Laboratory. Our Laboratory report states that they do not comply with the specifications for this project.

The material may possibly be thinned without detrumental effects, this would depend on the composition of the thinner. On page 55, paragraph (b) of the Special Provisions states that "The vinyl finish coat shall be supplied in a single package at consistency ready for use."

In a meeting held Tuesday, June 8, in Al Johnson's office, attended by Herb Schell, Ed Hardt, Ivan Merchant, Al Johnson, Dean Mandrell and myself, it was decided that the vinyl shall not be thinned to obtain application consistency.

As is our practice, we will continue to report out samples that fail to comply with the specifications. The determination of suitability for use is left to the judgement of the engineer.

JOHN C. JENKINS
Engineer of Materials & Research

By

J. E. CHIDSEY
Structural Quality Control Engineer

JEC:eb

cc: Mr. A. E. Johnson
Mr. I. D. Merchant
Mr. R. L. Schroeder

RECEIVED
JUN 10 1971
OFFICE OF
STATE HIGHWAY ENGINEER

LEE JOHNSON
ATTORNEY GENERAL

I. H. C-3 (17) 333
7276

DEPARTMENT OF JUSTICE
100 STATE OFFICE BUILDING
SALEM, OREGON 97310
TELEPHONE: (503) 378-6348

TRIAL DIVISION

THOMAS D. O'DELL
CHIEF TRIAL COUNSEL

WALLACE CARPENTER
ASSISTANT CHIEF TRIAL COUNSEL

LEONARD I. LINDAS
KEITH R. HALONEY
ASSISTANT ATTORNEYS GENERAL AND COUNSEL

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JAMES P. CRONAN, JR.
QUINTIN B. ESTELL
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LAWRENCE J. HALL
LESLIE B. HAMPTON
ROBERT A. HOLLAND
DONALD J. HOWE
E. DAVID LADD
JAMES F. LARSON
JOHN R. MC CULLOCH
FRANK C. MC KINNEY
EARL A. PRESTON
R. KEN ROBERTS
GEORGE E. ROHDE
JAMES A. SANDERSON
JACK L. SOLLIS
CARLOTTA N. SORENSEN
ASSISTANT ATTORNEYS GENERAL

June 7, 1971

Mr. Tom Edwards
Deputy Highway Engineer
Oregon Division of Highways
Salem, Oregon 97310

Re: Impossibility of Performance - Painting - Fremont Bridge
Highway Contracts Nos. 7214, 7276, 7310, 7311, 7312.

Dear Tom:

Special Provisions, Section 414, Painting New Metal Structures, Inorganic Zinc Silicate-Vinyl Coating, are found to be the same in each of the above contracts.

The contractor, in the special provisions section dealing with the "Scope of the Work", is informed that "all interior and exterior surfaces of structural steel members * * * shall be painted with one coat of selfcuring inorganic zinc silicate primer and one coat of compatible high-solids vinyl paint to a combined dry film thickness of not less than 8 mils * * *". (emphasis supplied)

The special provisions dealing with "Painting", state that the paint system for the metal work shall consist, inter alia, of the following:

Primer Coat - In organic zinc rich coating, a minimum dry film thickness of 3 mils.

Tie Coat - If recommended by the manufacturer of the prime and vinyl paint, to be applied in accordance with its recommendation.

Finish Coat - High build vinyl finish coat, a minimum dry film thickness of 5 mils. (emphasis supplied)

The special provisions pertaining to the vinyl finish coat, provides that this coat, when applied in one coat over the inorganic zinc primer, or the tie coat if required, "* * * shall not exhibit any 'pinholing' characteristics".

A reading of the foregoing in conjunction with the balance of the special provisions relating to painting convinces the writer

NOTED
TOM EDWARDS

of the following:

(a) The contractor was directed to use a one coat paint system.

(b) A tie coat was not to be used unless recommended by the manufacturer of the prime and vinyl paint.

Enjay Chemical Company, manufacturer of both paints, submitted documented data on August 12, 1969, to the contractor for submission to the engineer for approval. This was submitted in accordance with the special provisions relating to Inorganic Zinc Silicate Primer. The Enjay Co. brochure, Section 18, asserts Rust-Ban VM 5537 is completely compatible with Rust-Ban 191, without a tie coat. I assume the foregoing Rust Ban paint is the same as the inorganic zinc silicate primer and vinyl finish paint provided for in the special provisions.

The special provisions provide the vinyl finish coat is to be applied after erection. In applying the finish coat the contractor has been unable to do so without the finish product exhibiting excessive amounts of "pinholing" characteristics. The problem was brought to the attention of the Enjay Chemical Co. After expending over one month in an effort to totally eliminate the bubbling and pinholing characteristics of the 5 mils dry coat of vinyl applied over the inorganic zinc silicate primer, Enjay Chemical Co., by letter of November 6, 1970, to Frank Klaas, painting sub-contractor, states "it is our technical opinion that a totally bubble free pinhole free high build coating of O.S.H.D. formulation spec. vinyl is impossible to obtain over large surface areas on a consistant basis." (emphasis supplied)

It is the law of this state that a contractor is excused from the performance of a contract if the same is impossible of fulfillment due to causes beyond his control and without fault or negligence on his part. Dorsey v. Oregon Motor Stages, 183 Or 494, 194 P2d 967.

Impossibility of performance means not only strict and literal impossibility, but also impracticability because of extreme and unreasonable expense, injury or loss involved. Savage v. Peter Kiewit Co., 249 Or 147, 432 P2d 519, 437 P2d 487.

The Oregon Court, in the Savage case, states that in applying the doctrine of impossibility, courts recognize that unexpected difficulty or expense may approach such an extreme that practical impossibility exists. To operate as a discharge, the hardship must be so extreme as to be outside of any reasonable contemplation of the parties and the unforeseen hazard not one that reasonably should have been guarded against.

Another factor to be considered in dealing with the case at hand is that the State impliedly warrants that the specification

it furnishes a contractor will be adequate for producing the desired result. United States v. Spearin, 248 U.S. 132, 39 S. Ct. 59, 63 L. Ed. 166 (1918), A. Teichert & Son, Inc. v. State, 48 Cal. Rptr. 225, 283 Cap Apps. 2d, 736.

I am informed that while the desired results cannot be obtained by following the contract specifications, which also provide the contractor shall not deviate from them, satisfactory result could be obtained by the use of a tie coat and the application of the vinyl paint in multiple coats.

If this be true, the contractor, in my opinion, would be legally entitled to his additional costs if directed to do so.

Very truly yours,

LEE JOHNSON
Attorney General

L. I. Lindas
Assistant Attorney General
and Counsel to
Highway Division

LIL:mjg
cc- R. L. Porter

RECEIVED
STATE HIGHWAY ENGINEER

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JUN 2 - 1971
FOR FILING

F 405-8(17)303
7276

May 27, 1971

Mr. R. E. Simpson
Division Engineer
Federal Highway Administration
P. O. Box 309
Salem, Oregon 97308

Contract 7276
Frwlx 626-1013
FAP 1-405-8(17)303

Dear Sir:

Herewith for your consideration and approval are copies of State Force Order No. 4 covering the purchase of two pneumatic torque wrenches on the Fremont Bridge Section of the Stadium Freeway in Multnomah County.

The pneumatic torque wrenches are necessary for testing the torque of high strength bolts throughout the project.

The salvage value of these wrenches will be determined after the work has been completed and an appropriate credit will be made to the project.

The estimated total cost of the purchase of the wrenches under this order is $2,820 with Federal participation of $2,538. Reimbursement on an actual cost basis is requested.

This work was tentatively recommended for approval by the Federal Highway Administration Division Bridge Engineer on May 17, 1971.

Your approval as of May 17, 1971 is requested.

Very truly yours,

R. L. Porter
State Highway Engineer

By

John A. Bond
Construction Administration Engineer

JK:fw

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FORM 8-30
MAY 27 1971
PLAN FILING

I 405-4(12)-23
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon 97213
May 26, 1971

To: Memo To The Files

SUBJECT: West Fremont Interchange, 7214
Fremont Bridge, 7276
East Fremont Interchange, 7310
Proposal For The Use Of
Super Koropon

On May 25, at 1:30 PM a meeting was held in the Metropolitan Section conference room to discuss the addition of Super Koropon spray primer to the paint system for the Fremont Bridge complex. Listed below are those who attended the meeting.

Henry Hannan	Anderson-Hannan
* Ralph Hannan	" "
* John R. Kreites	" "
R. S. Everett	" "
* H. A. Anderson	" "
Bill Choate	Murphy Pacific
* E. D. (Jack) Geer	" "
* W. A. Bugge	Drake-Willamette, Joint Ventures
R. E. Grant	" " " "
* F. G. Drake	" " " "
Ron Owens	Klaas Bros., Inc
* Frank Klaas	" " "
* D. R. Blue	Enjay
* R. O. Cunningham	OSHD
* Ivan Merchant	"
* Alfred A. Rear	"
* J. D. Howard	"
* R. E. Shotwell	"
Charles Lobaugh	"
* A. E. Johnson	"
Ed Hardt	"

* Received a copy of this memo.

Prior to this meeting, the writer contacted the Contractors on the three Fremont projects (Anderson-Hannan, Murphy Pacific and Drake-Willamette) and asked them to work up a cost figure for the addition of Super Koropon spray primer to be applied from 0.7 to 1 mil in thickness between the zinc and vinyl coats. Mr. Johnson opened the meeting by referring to Harlan Associates research on the vinyl bubbling problem. They have tried

cy to [illegible] 5-27-71

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A. E. Johnson

Mobile, Enjay and Carbolene vinyls with various combinations of primers. The only combination that they have found which successfully eliminates bubbling and pin holing is the Super Koropon. Harlen's recommendation is for 16 hours of cure time for this material but it may be possible to cut this cure time down depending on field conditions.

Mr. Johnson went on to say that the above proposal for the addition of Koropon is being made because it offers the only method of applying vinyl without bubbling. Since we have not received any proposals from the paint suppliers for a method to apply five dry mils of vinyl in one coat without bubbles, it must be assumed that the Koropon method is the only method which will do the job.

Mr. Johnson also mentioned that the vinyl samples which Harlan had received from the job site had been thinned with MEK which tends to defeat the purpose of our specification and causes an increase in the bubbling problem since the addition of MEK increases the amount of solvents which must escape through the surface of the vinyl. He went on to say that we will take the cost figures for the Koropon and ask the FHWA to participate in this cost. He mentioned that we have recently been cited by the Federal people regarding our current repair work on the deficient zinc on the East and West projects since they feel that any cleaning of rusted areas should only be done by sand blasting.

Mr. Johnson reported that we have just received a proposal from Murphy Pacific quoting the extra cost for a two-coat high-build vinyl paint job. He said that he didn't believe this was the answer to the vinyl problem.since this would probably still result in some bubbling.

Mr. Anderson reiterated his concern for the delays to the project caused by the painting problems and said that he didn't think they could pour concrete decks fast enough in order to get all of the girders painted this year. He said that if it's necessary to use extra staging in order to paint the girders before the concrete decks are place, he would expect the State to bear the extra cost involved.

Mr. Everett and Mr. Kreiter expressed their concern for paint damage to automobiles under the work area when the Koropon is applied. The specifications for this paint indicates that it dries dust free in 15 minutes which would indicate that it could cause automobile damage. Mr. Kreiter mentioned that he had called the people who manufacture this paint and the man he talked to had had no experience on drying time as related to the over spray problem. His experience had been on aluminum applied in an aircraft plant.

Frank Klaas inquired as to a maximum drying time for the Koropon before application of vinyl. He is concerned that if it's allowed to dry for too long a time, that it will get a slick, hard surface with resulting poor adhesion for the vinyl.

Don Blue, Enjay's representative, said that their lab does not agree with Harlan's findings, that the Koropon is the only answer to the bubbling problem. They have tried a wash primer and epoxy primer and have had "good luck" over "aged" zinc. He did say that these primers did not prevent bubbling on "new" zinc. He suggested that we try Enjay's VY 6520 vinyl primer to determine if it will eliminate the bubbling problem. Mr. Johnson replied that he thought it was a little late for experimenting with Enjay's products and that this should have been done in the last several months. Mr. Blue said that he felt that a good paint job could be produced with a washed primer and two coats of vinyl. Mr. Johnson asked for his recommendations in writing and Mr. Blue said these would be submitted to the Contractors. Mr. Blue also inquired as to the curing time of the zinc in the experiments done by Harlan and Mr. Johnson said that there was a 48 hour cure time of 3 to 4 mils of RB 193 zinc.

Mr. Anderson said that he would offer a preliminary figure of $90 to $100,000 for the application of Koropon. This figure was for the exterior girders only assuming that the work could be done by November 1, and included no liability for paint damage. Jack Geer said that he would shortly submit a figure for the Koropon also with no acceptance of liability.

Mr. Johnson summarized the meeting by stating that the State requests cost figures from all three contractors for the application of Super Koropon and also for the application of two separate coats. After these figures are received, the State will request the FHWA people to participate in this cost. With their concurrences the work will proceed on whichever basis is selected. With regard to the zinc paint on the girder exteriors, he said a final decision has not been made as yet, but he personally felt we should have a minimum of 2 mils of zinc and preferably 3 mils.

R. L. Schroeder
Metropolitan Engineer

By:

Edward L. Hardt
Assistant Metropolitan Engineer

ELH:pb

RECEIVED
MAY 27 1971
OFFICE OF
STATE HIGHWAY ENGINEER

DeSoto

aerospace products

NAME: SUPER KOROPON FLUID RESISTANT PRIMER, YELLOW, BMS 10-11H, RULE 66

CODE: 513-706 Primer Base 910-707 Curing Solution

DESCRIPTION: A chemically cured epoxy. This product is designed to provide maximum protection for aluminum and magnesium against conditions of humidity, salt fog, fuel and hydraulic fluids, including Skydrol 500. The coating will withstand immersion in any of the above-mentioned fluids or environments for indefinite periods of time.

SURFACE PREPARATION: Designed for use on chemically cleaned aluminum and magnesium alloy surfaces. Excellent results will be obtained on practically all clean, paintable surfaces.

MIXING: Mix equal parts by volume of 513-706 and 910-707 just prior to use. Usable pot life at 77°F. is 8 hours with a correspondingly shorter pot life at higher temperatures and a longer pot life at lower temperatures. Spray to dry film thickness of 0.5 to 0.7 mil

APPLICATION: Any standard spray equipment may be used. Good results are obtained with DeVilbiss MBC spray gun, air cap #765, E or FF fluid tip and E or FF needle, Binks #18 spray gun, 63-PB air cap, 63-C fluid tip and 63-A needle. Equivalent spray equipment is available from other manufacturers.

DRY TIME:

Dust free	20 minutes
Dry to handle	40 minutes
Recoatable	1 hour
Ultimate cure	24 hours

Allow 6-8 hours elapsed time before putting the painted article into service. Full cure is obtained in 24 hours at 77°F. Longer dry times to full cure are necessary at lower temperatures.

PHYSICAL CONSTANTS:

513-706 Base

Weight per gallon	11.15 lbs.
Weight non-volatile	61.5%
Weight pigment	39.3%
Volume non-volatile	39.1%

DeSoto, Inc. 1700 South Mt. Prospect Road, Des Plaines, Illinois 60018
BERKELEY, CALIF. CHICAGO, ILL. CHICAGO HEIGHTS, ILL. GARLAND, TEXAS GREENSBORO, N. C. PENNSAUKEN, N. J.

"Any technical information presented herein is based on generally accepted analytical and testing practices and is believed to be accurate. No guarantee or warranty of any nature is expressed or implied."

DeSoto, Inc.

Sheet
-706/910-707
er Koropon F. R. Primer, Yellow
10-11H, Rule 66

SICAL CONSTANTS
nt'd.)

910-707 Curing Solution

Weight per gallon	6.85 lbs.
Weight non-volatile	6.3%
Volume non-volatile	5.0%

CAUTIONS:

The curing solution is an activator and must be used in the ratio recommended (equal parts base and activator.) No further thinning required. This product is not adversely affected by high humidity conditions; low temperatures, however, will retard curing speed. Painting should not be attempted at temperatures lower than 40°F. Use methyl-ethyl-ketone or methyl-isobutyl-ketone in combination with ethylene-glycol-monoethyl ether (Cellosolve) for clean-up. Clean-up should be done promptly to avoid cured paint remaining in or on equipment.

E HANDLING:

Normal precautions associated with the use of high vapor pressure, low flash point solvents (MEK) should be observed. Avoid prolonged skin contact and excessive inhalation. Wash hands thoroughly before smoking or eating.

R POLLUTION REGULATIONS:

This system is compatible with Rule 66 and Regulation 3.

12-1-69

RECEIVED
MAY 81
FOR FILING

MURPHY PACIFIC ENTERPRISES

4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

I-405-8(17)303
7376

May 19, 1971

Oregon State Hwy. Dept.
5821 N. E. Glisan St.
Portland, Oregon 97213

Attn: Mr. Robt. Cunningham
Resident Bridge Engineer

Subject: Fremont Street Bridge

Gentlemen:

We are transmitting herewith copies of letters from Mobil Chemical Company and Klaas Bros., Incorporated. These letters are the result of our paint investigation which we referenced to in our letter to you of Nov. 27, 1970.

As you will note, our investigation recommends that the vinyl will have to be applied on a two coat basis in order to comply with your added requirements.

We request a change order in the amount of $199,410.00 to cover our additional costs involved in the two coat system.

Very truly yours,

MURPHY PACIFIC ENTERPRISES

E. D. Geer
Projects Manager

NOTED
A. E. JOHNSON

NOTED
TOM EDWARDS

JG:es

NOTED
TOM EDWARDS

cc: T. Dias
B. Choate

Attachment
SCHROEDEL
MERCHANT

RECEIVED
MAY 24 1971
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAY 21 1971
Resident Bridge Engineer

Mobil Chemical Company

CHEMICAL COATINGS DIVISION

VERNON PLANT
2947 EAST 37TH STREET
LOS ANGELES, CALIFORNIA 90058
TELEPHONE (213) 589-6781

March 5, 1971

Mr. Frank A. Klaas, President
Klaas Brothers, Inc.
2012 Hyperion Avenue
Los Angeles, California 90027

FREMONT BRIDGE

Dear Mr. Klaas:

Material supplied by Mobil Chemical Company for the Fremont Bridge project, i.e. Mobilzinc 1 Inorganic Zinc Rich Primer, and 583-G-701 Vinyl Top Coat, conforms to the State of Oregon specifications as outlined in the special provisions.

There has been some bubbling of the vinyl topcoat. This is normal, and expected in the application of heavy vinyl top coats over an inorganic zinc rich primer. We do not consider it deleterious to the life of the coating system, and feel that the end results obtained thus far are satisfactory.

If the State of Oregon desires a relatively bubble free coating, this represents an additional requirement not included in the original specifications. This can be accomplished by the application of two thinner vinyl topcoats, instead of one heavy coat, to achieve the required film thickness of five mils.

Very truly yours,

R. M. Miller
Western Region Manager

RMM:hi

KLAAS BROS., INC.

5018 Hyperion Avenue
Los Angeles, California 90027
661-1158

April 20, 1971

Murphy Pacific Enterprises
P.O. Box 23007
Oakland, California

Reference: Fremont Bridge Superstructure

Gentlemen:

The bubbling in a heavy Vinyl Top Coat over an inorganic zinc primer is common, and should be expected, and is not detrimental to the life of the coating. The specifications require a specific formulation for the material with a drying time limitation. Naturally, there are definite reasons for the requirements and it is understandable. The formulation is to control the product used on the project. The drying time is to reduce the hazard of over spraying on adjacent property. However, these requirements have created certain inherent problems within the material, one being the inability of the solvent to release from the material prior to a skin forming an impassible shield causing solvent gases to build up and create bubbles. The amount of bubbling is very inconsistent and relates to steel temperature, air temperature, air movement and velocity, and humidity, and the fact that is is being applied over inorganic zinc which by its own nature contributes air pockets in which solvent gases build up varying with the surface temperature.

Experimenting as recently as April 8 to reduce the amount of bubbling in the vinyl top coat continues to indicate the most effective method for application of the material in two coats. However, since the specifications specifically require the application be in one coat, the cost of applying the material in two coats was not considered in our bid.

If the Oregon State Highway Department requests the material be applied in two coats, the additional cost will be as follows:

Labor	$130,700.00
Material	11,900.00
Equipment	30,800.00
Total	$173,400.00

These costs are based on the present construction schedule and that the bridge will not be opened to traffic until the painting is completed.

If theere are any further questions, please contact the undersigned.

Sincerely,

KLAAS BROS., INC.

Frank A. Klaas
President

FAK:cf

Enclosure

I-405-8(17)303

STATE COPY

G-1P

RECEIVED
JUN 2 1971
OFFICE OF
STATE HIGHWAY ENGINEER

APPROVED EFFECTIVE DATE 5-12-71
Contingent upon modification for project agreement if additional funds are required
BY
TITLE Dist. Engineer
DATE 6-3-71
FEDERAL HIGHWAY ADMINISTRATION

OREGON STATE HIGHWAY DEPARTMENT

Order for State Force Work

APPLYING TO CONTRACT PROJECTS

Project Name Fremont Bridge Superstructure Date May 18, 1971, 19

Highway Stadium Freeway Contract No. 7276 F. A. Project No. I-405-8(17)303

County Multnomah Prefix 626-1013 Account No. 900-04

Description of Work To Be Done:

Purchase two "Pneu-Torque" pneumatic torque wrenches.

Location by Station Numbers:

Entire project, sta. FB3 346+20.50 to FB3 367+79.50.

Estimate of Quantities and Costs:

2 each at $1,410 each —— $2,820.00

NOTED
TOM EDWARDS

Explanation: Special engineering test equipment is needed on this project to comply with project specifications. Wrenches will be purchased with Federal participation and the project will be credited with the salvage value of the tools at the conclusion of the project.

INSTRUCTIONS

Submit a separate order for each piece or kind of state force work to be undertaken. Use the account number applying to that work as indicated in the account numbers assigned to state force work on contract jobs.

Five copies of the order are to be submitted to Salem. After approval by the Assistant State Highway Engineer, one copy will be sent to the Division Engineer and one copy to the Resident Engineer.

Project authorization	$24,054,902.30
Present estimate of project cost, including $2,820.00 for work under this order	$23,223,985.24
Expected under-run / over-run (amount)	$830,437.06
Expected under-run / over-run (per cent)	3.6

Space to right of this line is for use of Salem Office

Submitted by: R.O. Cunningham, Resident Engineer

Approval Recommended: Construction Engineer or Bridge Engineer

Approval Recommended: Assistant Division Engineer

Approved: Deputy State Highway Engineer, Assistant State Highway Engineer or Director

6-4-71

RECEIVED
MAY

Form FHWA-21 (12-67)
UNITED STATES GOVERNMENT

Memorandum

FOR

I-405-8(17)303

TO : Mr. R. L. Porter, State Highway Engineer
Salem, Oregon
Attention: Mr. A. E. Johnson

7276

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

DATE: May 17, 1971

In reply refer to: 08-35.6

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure
Inspection - San Francisco Bay Area

Attached is a project stage inspection performed on the painting in the contractor's fabrication plants in California. It appears that the contractor is obtaining an acceptable job of inorganic zinc application but is experiencing some problems applying the vinyl in one coat.

Enclosure

RECEIVED
MAY 18 1971
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
A. E. JOHNSON

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

STATE COPY

FORM PR-33S (REV. 3-68)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

CONSTRUCTION INSPECTION REPORT

(PPM 20-6.1)

~~OSHD~~ G.L.Green, Engr Coord
~~Region~~
~~Wash DC~~
~~W.H.Bryant, Area Engr~~ ~~PE~~

(Check appropriate box) ☐ Contact ☐ Project Stage Inspection ☐ Final Inspection

Region No.	Report No.	County	Division
8	11	Multnomah	Oregon

Date of Inspection	Inspection Made By	Project No.
4-29 & 30-71	R. W. Pillsbury, Structural Engineer	I-405-8(17)303

In Company With: Ed Rief, OSHD; R. Nilsen, K. Dystrom, Pittsburgh Testing Laboratory

Quality of Work*	Progress of Work	Time Elapsed %	Work Completed %

Report to Include: (1) Scope of Inspection (2) Summary of Findings, Recommendations, and Action Taken.

(*Not applicable for all Contracts.)

FREMONT BRIDGE SUPERSTRUCTURE

INTRODUCTION

On April 29 and 30 Mr. Rief, Inspection Engineer, OSHD, and the writer flew to the contractor's Richmond, California, plant to view the painting operations. This contract calls for the inorganic zinc high-build vinyl system, the same as that specified on the approach contracts. These projects are experiencing some difficulties in obtaining a satisfactory coating. On this project another brand of paint, Mobil, is being used. The purpose of the inspection was to determine if this contractor was also having problems and how he was solving them.

Unfortunately cleaning and painting was only being done on steel pentagons. The only painting observed was of the vinyl on these small irregular surfaces. Previously placed paint, both zinc and vinyl, was inspected at some length, however.

CLEANING

Smaller pieces were being grit blasted in a building housing the paint area. The pieces were on railroad cars and could be moved directly to the paint area. The paint superintendent, Bob Burdick, stated they were using a mixture of G25, G40, and G50 iron grit. The grit was reclaimed, reclassed, and reused. Mr. Burdick said they were getting an angular pattern 1 1/2 mils high. We viewed some incomplete work and found it to be good. The pattern was angular. A few rust particles were found in the bottom of some valleys, but the cleaning was not complete. A sample plate was accepted as a cleaning sample and submitted to the OSHD Materials Lab (Sample No. 60452).

Cleaning of larger pieces was done outside by sandblasting. The sand used was a 20-30 mesh Monterey sand.

INORGANIC ZINC

The contractor is applying 3 dry mils of Mobilzinc without any apparent problems. The application is by regular commercial painting equipment. The pot agitates the paint and has a pressure of 35 psi with about

(more)

REPLACES PR 33A 3-65, WHICH WILL NOT BE USED.

70-80 psi at the nozzle. The length of hose is 35 to 70 feet and the paint equipment was at the same height as the work. The paint is applied 6 wet mils thick or about 185 square feet per gallon. The zinc paint has been very consistent in weight, viscosity, etc. Painting is done with a 50% overlap on a cross-spray pattern, according to Mr. Buskirk.

The painting is usually done the same shift as the cleaning or at least the next day. No post cure is used on the zinc. The paint is allowed to cure naturally at least for 4 days but curing may run up to 3 or 4 weeks.

The paint crew checks paint thickness with a wet mil gage initially and an Elcometer later. The inspector uses a Tooke gage to check his Elcometer which he uses for the bulk of the checking. Mr. Rief instructed the inspector to take more Tooke gage readings when the thickness was in doubt. Mr. Rief also instructed the inspector in the proper use of the Elcometer.

Several coped holes were found to have incomplete coverage. Also some flame hardened edges were found with the paint coming off.

HIGH BUILD VINYL

The plans call for a shop application of a 5-dry mil coat of high build vinyl in inaccessible areas. The inside of the steel parapets and the arch rib sections were reviewed in the plant.

It was reported that the contractor had problems trying to apply a single coat of Mobil vinyl without sags and blisters. To overcome these problems he is applying the paint in two coats and has essentially eliminated the problems. The first coat is approximately 2 dry mils thick and 2 hours later a second coat is applied to bring the total thickness to 5 mils. The painted surfaces were found to have only an occasional area of small blisters and virtually no pinholes visible to the unaided eye.

The vinyl was being applied with a Gray Co. Airless spray system. The spray gun had a 417 tip with an 8" fan and a 0.017 orfice operating at 3000 psi. From 35' to 70' of 3/8" hose was being used. The paint pot and the work were on the same level. The vinyl paint is not thinned. The coverage is about 80 square feet per gallon.

Some thin coating areas were found in the arch ribs, but the units in question had not been accepted by the Pittsburgh Testing Laboratory Inspector. One accepted unit was checked, however, and a thin coating was found on the diaphragm. Several of the parapet interiors were found to be short of paint and this was brought to the attention of the inspector. Again some coped holes were found lacking paint.

OTHER INSPECTION POINTS

A visit was made to C and H Machine and Engineering plant in Berkeley to view the suspender guide castings. These were in the shop to have the zinc lining in the cable holes machined. When the initial machining

(more)

was started porosity was found in the lining. The porosity was found to some degree near the bottom of every casting. Work has been stopped and the inspectors are now waiting word from the fabricator as to what repairs will be made. The fabricator is using one casting to try various methods of repair. A 3/4" H.S. bolt used to connect the casting segments was taken as a sample and submitted to the OSHD Materials Lab (Sample No. 60451). The heads of all the bolts had been heated and showed scaling. The bolt identification on the head in most cases was nearly completely obliterated.

Bearing castings were also viewed, one at the Richmond yard and one at Bethlehem Steel plant in San Francisco. Nothing could be determined about them except the inorganic zinc paint coat was thin.

Welding in progress and completed was only observed in passing and appeared satisfactory.

The arch rib side plate at A30 with a bulge in it was viewed. This defect was reported in an inspection report from Pittsburgh Testing Lab. The bulge was about 1/4" high over about 1 1/2' near the A30 splice plates. There is a hollow on the inside, but it does not seem as deep as the bulge is high indicating that the plate is thicker at this point. The Pittsburgh Testing Laboratory inspectors were asked to measure the thickness of the plate ultrasonically. The inspectors said they could find nothing in the specifications to cause the plate to be rejected. Actually there are many smaller bulges and dips along all the plates. This defect probably was caused during rolling when the rolls stopped. The plate has been checked for laminations and other internal defects and none were found. The welds in the area of the bulge were measured and found to be 1/8" oversize. In view of all of the above, the defect is considered to be acceptable.

CLOSEOUT CONFERENCE

A closeout conference was held with lead Pittsburgh Testing Lab Inspector Walt Nystrom. We told him:

1. About paint deficiencies on parapets and diaphragms
2. Poor paint adherence to flame cut edges
3. Lack of paint in coped holes
4. That we had authorized the Pittsburgh Testing Lab paint inspector to take as many Tooke readings as he deemed necessary
5. To obtain temperature and humidity gages and use them

CONCLUSION

The paint work in Richmond seems to be progressing very satisfactorily, much better than on the companion jobs. Several small points were brought up, but these are not felt to be detrimental to the overall good work.

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MAY 27 1971
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I 405-8(17)203
12 76

HARLAN Associates, Inc.

PAINT RESEARCH LABORATORY
11 DUBOCE AVENUE - SAN FRANCISCO, CALIFORNIA 94103
621-7245
AREA CODE 415

TO: Oregon State Highway Department
138 State Highway Building
Salem, Oregon 97310

DATE: 11 May 1971

INVOICE NO:017517

This invoice covers work completed to date with regard to Jobsite inspections and preliminary evaluation tests with regard to bubbling and/or pinholing of High Build Vinyl Mastic applied to fresh (48 hours old) inorganic zinc:

Jobsite inspections (4 days @ $400.00/day):	$1600.00
Travel and living expenses:	342.00
Laboratory tests, summations and report of even date 60 hours @ $40.00/hour:	2400.00
Miscellaneous	50.00
	$4392.00

Approved 5-26-71
Asst. State Hwy. Engr.

Our File: P-5711
HRHJr:mp
Orig. & 2cc

Charge to:

626-1011-900	$1,634.00
626-1017-900	1,634.00
626-1013-900	1,124.00
Total	$4,392.00

Orig. and 2 cys. to Accounting
cys. to Ed Hardt
John Howard
Bob Shotwell
Bob Cunningham
A. E. Johnson

AFFILIATIONS: National Paint, Varnish and Lacquer Association . . . Federation of Societies for Paint Technology . . . American Chemical Society . . . American Society for Testing and Materials . . . American Institute of Chemists . . . Air Pollution Control Association . . . American Oil Chemist's Society . . . Forest Products Research Society . . . International Science Foundation . . . Technical Association of the Pulp and Paper Industry . . .
Registered Chemical Engineer, State of California

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JUL 2 371
FOR FILING

OREGON STATE HIGHWAY DEPARTMENT

DIVISION 1

P. O. BOX 02157 • PORTLAND, OREGON • 97202 • Phone 654-7741

I-405-8(17)303
7276

May 7, 1971

Mr. Al E. Johnson
Asst. State Hwy. Engr.
Highway Building
Center & Capitol Streets
Salem, Oregon 97310

NOTED
A. E. JOHNSON

Dear Mr. Johnson:

SUBJECT: Paint Inspection
Fremont Bridge - S.C. #7276

Enclosed are copies of paint thickness tests taken on April 29 and April 30, 1971.

Sincerely,

Ed J. Rief
Dist. Insp. Engr.

EJR:ljp
3 Encls.

RECEIVED
MAY 12 1971
OFFICE OF
STATE HIGHWAY ENGINEER

Form E49x

OREGON STATE
HIGHWAY DEPARTMENT
FREMONT BRIDGE

TABULATION SHEET
SHEET 1 OF 3 SHEETS

State Contract #7276 - Prefix 626-1013
Murphy Pacific Corp. - Emeryville, Calif.
Pillsbury - Rief 4/29-30/71

Readings with Tooke unless otherwise noted. All readings in Mils.

PARAPET					
12M22 -	End Plate		Vinyl		Zinc
	Tooke Gage		1		3.5
	"	"	1		3
	"	"	2		3
13M2L	"	"	1		3
	"	"	1.5		3
	"	"	1+		3
17M1R	"	"	3+		3+
POST					
512L35L34A	"	"			3.5+
	Microtest				3.5+
					3.5
ARCHRIB - A30 & A29					
Inside	Tooke Gage	No. 1	5		3+
	Microtest	2	10	TOTAL	
		3	5		3
		4	5+		3-
		5	5		3
	Diaphram	6	3+		3
	"	7	3-		3+
Outside		No. 1			4.5+ Microtest
		2			4.5 (4.0 Micro)
		3			3.5
		4			3+ (3.0 Micro)

Form E49x

OREGON STATE
HIGHWAY DEPARTMENT
FREMONT BRIDGE

TABULATION SHEET
SHEET 2 OF 3 SHEETS

ARCHRIB		
119AR2L	Vinyl	Zinc
Inside No. 1	3.5	4
2	5	4.5+
3	2.5	4
4	2.5	2.5
5	3+	4+ (7.5+ Microtest)
6		3+
7		3
8		3
9		2.5
10		3+
11		3.5
A514-F-20742A		
1		3.5
2		3.5
3		3.0
4		3.5
5		3.5+
GIRDER BOX		
206-Splice #27 (4)		
So. Girder		
Outside 1		3-
2		3.5
3		3.5

Form 24dx 1

OREGON STATE
HIGHWAY DEPARTMENT
FREMONT BRIDGE

TABULATION SHEET
SHEET 3 OF 3 SHEETS

ARCH RIB		Vinyl	Zinc
613AR, 30-31		4	3
Inside		4	3
Vinyl Rejected By P. T. L.		2.5	4

RECEIVED
MAY 10 1971
FORM E-30
FOR FILING

I-405-3(17)273
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon 97213
May 3, 1971

SUBJECT: Fremont Bridge Superstructure
Contract No. 7276
Moorage for Marine Boss

To: Ivan Merchant
Bridge Engineer
State Highway Building
Salem

Attached you will find a copy of a letter date April 27, from Murphy Pacific Enterprises which relates to access to the west side of the Fremont Bridge for the Marine Boss. The Contractor is requesting compensation for the cost of moving the Marine Boss in order to accommodate moorage of nearby shipping for the Port of Portland.

Dictated to Merchant 5-11-71

This problem was discussed by Mr. Johnson and Mr. Sollis and yourself with Jack Geer on April 21, and for that reason the attached letter is referred to you for further handling.

Robert L. Schroeder
Metropolitan Engineer

By:

5-11-71
Merchant;
Please proceed to contact FHWA re this as per our conversation.
A.E.J.

Edward L. Hardt
Assistant Metropolitan Engineer

ELH:pb

Encs

cc: Robert Cunningham

RECEIVED
MAY 4 1971
BRIDGE DIVISION

MURPHY PACIFIC ENTERPRISES
4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

April 27, 1971

Oregon State Hwy. Dept.
Attn: R. O. Cunningham
Resident Bridge Engineer
5521 N. E. Glisan St.
Portland, Oregon

Subject: Fremont Bridge

Gentlemen·

Last Friday we met in Salem with Mr. Merchant, Mr. Johnson, and Mr. Sollis of the Oregon State Highway Department to discuss conditions concerning the easement with the Port of Portland.

At that time it was agreed we would modify our false work in Front Street to make additional clearance over the railroad spur leading into the Port property on the north side of the Fremont Street Bridge right-of-way.

At this meeting we were made aware of an existing agreement between the Port of Portland and the State of Oregon granting the port access for their ships outside of the harbor line extending in the bridge right-of-way.

On Thursday, April 15th it was necessary for us to suspend operations with the Marine Boss and move out of the way so that a ship could tie up to the Port dock utilizing navigable waters on the bridge right-of-way.

Neither the Specifications nor the Provisions of Marine Law require that we move our vessel when anchored outside of the harbor line to accommodate the Port of Portland. Since it is required that we move our vessel under these conditions we hereby request a change order extending our completion time for the contract and compensate us for our additional costs involved for rental of the

.....continued

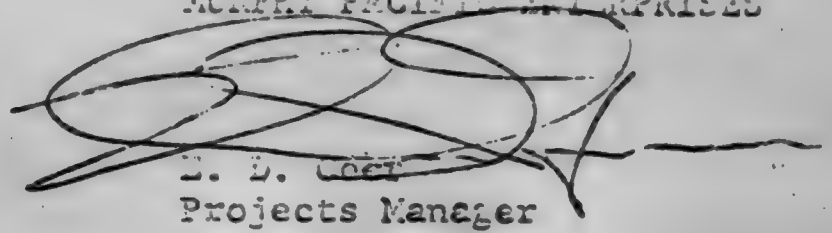
RECEIVED
APR 29 1971
Resident Bridge Engineer

RECEIVED
MAY 4 1971
BRIDGE DIVISION

Marine Loss and lost man hours incurred on the dates involved in these moves.

Very truly yours,

MURRY PACIFIC ENTERPRISES



J. D. Cost
Projects Manager

JG:cs

cc: I. Merchant
B. Choate
SCHROEDER

RECEIVED
MAY 4 1971
BRIDGE DIVISION

D
MAY 1 - 1971
FOR FILING
I-405-8(17)
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
April 29, 1971

NOTED
R. E. JOHNSON

To:
Memo to the Files

SUBJECT: AASHO Bridge and Structures Committee Meeting in San Diego and Inspection Trip to Murphy Pacific Fabricating Plant in Richmond, California

The Region IV Bridge and Structures Committee meeting was held in the San Diego Hilton Hotel on April 5 and 6. I requested travel expenses to this meeting equivalent to air coach fare in lieu of private car mileage inasmuch as I desired to take some vacation time and visit my son in Los Altos Hills on my way home from San Diego.

About 9 a.m. April 12, while at my son's home, I received a telephone call from Mr. Donald Scott of Pittsburgh Testing Laboratory in Portland requesting that I meet him at the Murphy Pacific plant in Richmond about 1 p.m. to go over the plant operations. Shortly after 1 p.m. I did meet Mr. Scott and Mr. Ralph Mikus, the manager of the San Francisco plant, and spent the afternoon going over the fabrication in progress on the Fremont Bridge Superstructure.

Fabrication work such as set-up, welding, hole spacing, et cetera, looks very good on the work inspected. I believe Murphy Pacific are trying to do us an "A-up-quality" job. There were two items of work pertaining to painting which were discussed in detail with Mr. Mikus and Mr. Scott. These were the prime coat of inorganic zinc on shop-installed high-strength bolts. There was an indication in a few instances that the black bolt had not been properly sand blasted to white metal prior to painting and that the inorganic zinc did not adhere. Mr. Mikus assured me that they understood that the contractor was to follow the specification requirements as there had been a previous request by the contractor to deviate from the specifications.

The second point was that there were splice plates on which the exposed side had not been sand blasted and painted and I believe that according to the specifications this should be done. Again this was pointed out to Mr. Mikus and he assured me that they would pay particular attention to the above-mentioned two points in the shop painting.

At the time of the inspection there were 13 tie girder sections with individual components fabricated but which still had to be assembled and welded to the girder shape, this being the major part of the work to finish the job. It was estimated that this would be completed by the end of May and that all structural steel would be painted and shipped before the end of June.

One arch rib section which had been mentioned in Pittsburgh Testing Laboratory's weekly reports as having a cover plate of varying thickness. This arch rib section is completely fabricated and Mr. Mikus showed me the plate in question. For some reason in the rolling process the plate was rolled with an additional thickness in a wave pattern at one end of the plate. Mr. Mikus assured me that the plate was the required size at the minimum point and that the ultrasonic inspection of the plate indicate no laminations or other defects. Outside of a slight loss in appearance if one's eye is at the corner of the arch rib, there is no detrimental effect and I authorized him to accept the member as fabricated.

Upon completion of our tour of the plant I left at about 5 p.m. to return to my motel and head for home.

Ivan D. Merchant
Bridge Engineer

IDM:dh

cc A. E. Johnson
V. E. Skoog

RECEIVED
APR 29 1971
OFFICE OF
STATE HIGHWAY ENGINEER

APR 28 1971
I 11.5-8(17)305
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
April 26, 1971

To: MEMO TO THE FILE

SUBJECT: Fremont Bridge
Murphy Pacific Project

On April 23, Mr. Ivan Merchant, Mr. Jack Sollis and the writer met with Mr. Jack Geer and Murphy Pacific's attorney Mr. Gary F. Swift relative to the proposed agreement with the Port of Portland conveying a temporary easement for the erection of steel, et cetera, in connection with the construction of the Fremont Bridge.

Two portions, Nos. 3 and 5, were discussed primarily. Mr. Geer felt that No. 3 would require the contractor to move the marine docks at any time the Port wished to dock a ship in the area under the bridge, and pointed to our earlier agreement with the Port of Portland outlining the right for them to do so. I advised Mr. Geer that as far as additional expenses were concerned if that would occur, such a matter would have to be handled only with concurrence of the Federal Highway Administration, and the State would not guarantee any remuneration on this score.

In connection with Item No. 5, Mr. Geer was advised to remodel falsework over the spur track to the Port of Portland dock which would, in essence, remove the limitations.

It was pointed out by Mr. Geer that provisions of Item No. 6 include such unlimited liability for the contractor that he felt it was unreasonable and Mr. Sollis agreed. The contractor will ask that Item No. 6 be modified and also that the time limit of the temporary easement be reduced to the term of three years, or to the completion of the use of the easement area.

A. E. Johnson
Assistant State Highway Engineer

AEJ:sr

cc: R. L. Porter
Tom Edwards
Ivan Merchant
Jack Sollis

LAND USE RESTRICTIONS

WHEREAS, the City of Portland, Oregon, a municipal corporation of the State of Oregon, acting by and through its The Commission of Public Docks, hereinafter referred to as "Commission," is the owner of the following described real property hereinafter referred to as "Parcel A":

A parcel of land lying in the SE¼ of Section 28, Township 1 North, Range 1 East, W.M., Multnomah County, Oregon, the said parcel being that portion of said SE¼ lying Northwesterly of the Southeasterly line, and its Northeasterly extension, of Lot 11 of River Block, WATSON'S ADDITION to the City of Portland; Northeasterly of N.W. Front Street; Southwesterly of the West Harbor line of the Willamette River; and Southeasterly of a line which is parallel to and 137.5 feet Northwesterly of the center line of the Southbound lane of the Stadium Freeway, which center line is described as follows:

Beginning at Engineer's center line Station "FB3" 343+63.50, said Station being 1075.76 feet South and 979.01 feet West of the intersection of the center line of Mississippi Avenue and North Stanton Street; thence South 42° 09' West, 2436+00 feet to Engineer's center line Station "FB3" 368+00.

Bearings used herein are based upon the Oregon Co-ordinate System, North Zone.

The parcel of land contains 33,850 square feet, more or less;

and,

WHEREAS, the STATE of OREGON, by and through its State Highway Commission, hereinafter referred to as "State," is acquiring certain real property, hereinafter referred to as "Parcel B," which abuts on the Southeasterly side of Parcel A and is described as follows:

A parcel of land lying in the SE¼ of Section 28, Township 1 North, Range 1 East, W.M., Multnomah County, Oregon; the said parcel being described as follows:

Beginning at the most Westerly corner of Lot 10 of River Block, WATSON'S ADDITION TO THE CITY OF PORTLAND, in the City of Portland; thence South 50° 27' East along the Southwesterly line of Lots 10 and 9 of said River Block, WATSON'S ADDITION, a distance of 135 feet; thence North 40° 33' East, 365 feet, more or less, to the West Harbor line of the Willamette River; thence Northwesterly along said West Harbor line to the Northeasterly extension of the Northwesterly line of said Lot 10; thence Southwesterly along said Northeasterly extension and the Northwesterly line of said Lot 10 to the place of beginning.

48261
REC. 12-8-69 Mult. CO.
RECORD OF Deed BOOK 710 PAGE 727

LAND USE RESTRICTIONS

WHEREAS, the City of Portland, Oregon, a municipal corporation of the State of Oregon, acting by and through its The Commission of Public Docks, hereinafter referred to as "Commission," is the owner of the following described real property hereinafter referred to as "Parcel A":

> A parcel of land lying in the SE¼ of Section 28, Township 1 North, Range 1 East, W.M., Multnomah County, Oregon, the said parcel being that portion of said SE¼ lying Northwesterly of the Southeasterly line, and its Northeasterly extension, of Lot 11 of River Block, WATSON'S ADDITION to the City of Portland; Northeasterly of N.W. Front Street; Southwesterly of the West Harbor line of the Willamette River; and Southeasterly of a line which is parallel to and 137.5 feet Northwesterly of the center line of the Southbound lane of the Stadium Freeway, which center line is described as follows:
>
> Beginning at Engineer's center line Station "FB3" 343+63.50, said Station being 1075.76 feet South and 979.01 feet West of the intersection of the center line of Mississippi Avenue and North Stanton Street; thence South 42° 09' West, 2436+00 feet to Engineer's center line Station "FB3" 368+00.
>
> Bearings used herein are based upon the Oregon Co-ordinate System, North Zone.
>
> The parcel of land contains 33,850 square feet, more or less;

and,

WHEREAS, the STATE of OREGON, by and through its State Highway Commission, hereinafter referred to as "State," is acquiring certain real property, hereinafter referred to as "Parcel B," which abuts on the Southeasterly side of Parcel A and is described as follows:

> A parcel of land lying in the SE¼ of Section 28, Township 1 North, Range 1 East, W.M., Multnomah County, Oregon; the said parcel being described as follows:
>
> Beginning at the most Westerly corner of Lot 10 of River Block, WATSON'S ADDITION TO THE CITY OF PORTLAND, in the City of Portland; thence South 50° 27' East along the Southwesterly line of Lots 10 and 9 of said River Block, WATSON'S ADDITION, a distance of 135 feet; thence North 40° 33' East, 365 feet, more or less, to the West Harbor line of the Willamette River; thence Northwesterly along said West Harbor line to the Northeasterly extension of the Northwesterly line of said Lot 10; thence Southwesterly along said Northeasterly extension and the Northwesterly line of said Lot 10 to the place of beginning.

48261

RTC 12-8-69 Mult. CO.

RECORD OF Deed BOOK 710 PAGE 727

FILE COPY

The parcel of land to which this description applies contains 50,750 square feet, more or less;

and

WHEREAS, State plans to construct part of the structure of the Fremont Bridge upon Parcel B; and

WHEREAS, costly damage could result to such bridge structure by the occurrence of a fire under or near said bridge structure and, therefore, Commission has agreed, for the consideration hereinafter set forth, to restrict the use of Parcel A in order to reduce such fire hazard;

NOW, THEREFORE, in consideration of the payment by State to Commission of Thirty-five Thousand One Hundred and Thirty-three Dollars ($35,133.00), receipt of which is hereby acknowledged, Commission hereby covenants and agrees that the use of Parcel A shall be subject to the following restrictions:

1. No part of Parcel A shall be used for the manufacture, storage, keeping or holding of flammable liquids and gases, combustible liquids, combustible chemicals, combustible metals, combustible plastics, or explosives of any kind. For this purpose, ammonium nitrate is regarded as an explosive.

2. No part of Parcel A shall be used for the manufacture or storage, at any one time, of combustible cargoes such as lumber products, combustible fibers, paper products, pulverized feed, feed and flour, sulphur, free-burning plastics, hazardous chemicals, in individual or combined total amounts, in excess of one carload lot.

All classes of cargo, goods and commodities except explosives and ammonium nitrate, may be moved through, over and across Parcel A, and all vehicles, including rail cars, shall have free and unrestricted access to, from and over Parcel A in connection with terminal operations. The term "explosives" shall not include small arms ammunition. Flammable liquids and gases, combustible liquids, combustible chemicals, combustible metals, combustible plastics and oxidizing materials and unstable chemicals shall be moved over and across Parcel A in a continuous movement except for unavoidable temporary delays, and such commodities

may be loaded to, or discharged from, a vessel moored adjacent to said area, but shall not be stored or transferred from one vehicle to another in said area. Combustible cargoes such as lumber products, combustible fibers, paper products, pulverized feed, feed and flour, sulphur, free-burning plastics and hazardous chemicals may be held or kept on said Parcel A when loaded on vehicles, including rail cars, for such period of time as may be necessary in the loading and unloading of a vessel; provided, however, that any such vehicle or rail car containing such materials shall not be left unattended either under or within 50 feet in any direction of the steel bridge structure measured horizontally or vertically from the nearest part of said bridge structure.

3. Commission shall not permit any hazardous or unreasonable smoke, fumes, vapor or odors to emanate from Parcel A.

4. Commission shall have the right to allow any and all vessels to moor adjacent to Parcels A and B and adjacent to the dolphins described in the separate agreement between the parties dated January 23, 1968, and to tie and secure lines to said Parcel A and to the dolphins adjacent to Parcel B for the purpose of berthing, loading and unloading vessels.

5. State shall have the right to impose on Parcel A reasonable regulations deemed necessary by State to protect against fire and any other occurrence that might be a hazard to the Fremont Bridge structure, or to its use by the traveling public, and Commission shall comply with such regulations; provided, however, that State shall not have the right to limit or interfere with the rights and usages specifically provided for and authorized in Paragraphs 2, 4, and 6 of this agreement.

6. No new buildings or other structures shall be constructed or placed on Parcel A. Commission shall have the right to use, operate, maintain and replace existing structures and facilities, including an existing crane located on said Parcel A.

7. State shall have the right to go upon Parcel A at all reasonable times in order to examine and determine the use being made of Parcel A by Commission in its operations.

8. The covenants herein contained shall run with the land, Parcel A, above described, in favor of State, its successors and assigns, as a benefit to Parcel B, for the life of the Fremont Bridge structure and any replacement thereof, and shall bind Commission, its successors and assigns, and all lessees, tenants or other persons, firms, corporations, associations, public bodies or other organizations of any kind that may use Parcel A or any part thereof.

9. Motor vehicles, including trucks not loaded with materials set out in Paragraphs 1 and 2 above, may be parked or placed on Parcel A, unattended.

10. There shall be no access between Parcel A and the Fremont Bridge.

IN WITNESS WHEREOF, the parties hereto have set their hands and affixed their seals this 2 day of Oct., 1969.

THE CITY OF PORTLAND ACTING BY AND THROUGH ITS THE COMMISSION OF PUBLIC DOCKS

H. T. Shaver /s/
Vice- Chairman

Thomas P. Guerin /s/
Secretary

ATTEST:

Floyd Query /s/
Secretary

APPROVED:

F. B. Klaboe /s/
Assistant State Highway Engineer

APPROVED AS TO FORM:

G. E. Ronde /s/
Chief Counsel

Jack L. Sollis /s/
Staff Attorney

APPROVED AS TO FORM:

White, Sutherland & Gilbertson /s/
Counsel for Commission of Public Docks
By E. Wayne Cordes /s/

APPROVED:
? Smith, E. H.
? Controller

STATE OF OREGON, by and through its STATE HIGHWAY COMMISSION

By Glenn L. Jackson /s/
Chairman

By Fred W. Hill /s/
Commissioner

By _____
Commissioner

(SEAL)

STATE OF OREGON

County of Marion

On this 26th day of November, 1969, before me appeared Glenn L. Jackson, Fred W. Hill, [redacted] to me personally known, who, each being duly sworn did say that he, the said Glenn L. Jackson is Chairman of the State Highway Commission of the State of Oregon, and that he, the said Fred W. Hill [redacted] is State Highway Commissioner of the State of Oregon; that the seal affixed to said instrument is the seal of the State Highway Commission, and that the said instrument is signed and sealed in behalf of said State by said Commission, and that the said Chairman and the said Commissioner acknowledge said instrument to be the free act and deed of said State, by said State Highway Commission.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal the day and year last above written.

Cecil W. Head /s/

(SEAL)

Comm. Expires Nov. 5, 1970

KNOW ALL MEN BY THESE PRESENTS, that the Port of Portland, a municipal corporation of the State of Oregon, for and in consideration of the sum of One and no/100 Dollars ($1.00) and other valuable consideration, by it received, receipt whereof it is acknowledged, and subject to the hereinafter specified restrictions and conditions does grant and convey unto the State of Oregon, by and through its State Highway Commission, a temporary easement for the erection of steel and other related activities in connection with the construction of the Fremont Bridge, over and across the following described property, to-wit:

A parcel of land lying in River Lot 11, WATSON'S ADDITION to the City of Portland, Multnomah County, Oregon; the said parcel being that portion of said Lot 11 included in a strip of land, 50 feet in width, lying adjacent to and Northwesterly of the Southeasterly line of said Lot 11 and Southwesterly of a line drawn at right angles to the center line of the Southbound lane of the Stadium Freeway at Engineer's center line Station "FB3" 362+70 on said center line, which center line is described as follows:

Beginning at Engineer's center line Station "FB3" 343+63.50 said Station being 1075.76 feet South and 979.01 feet West of the intersection of the center lines of Mississippi Avenue and North Stanton Street; thence South 42° 09' West, 2436.50 feet to Engineer's center line Station "FB3" 368+00

Bearings are based upon the Oregon Co-ordinate System, North Zone.

The parcel of land to which this description applies contains 15,000 square feet ±.

The term and duration of the above described temporary easement for the erection of steel and related activities in conjunction with the construction of the Fremont Bridge shall be for the term of three (3) years from the date hereof or the completion of the bridge construction project, whichever is sooner.

It is expressly understood that the fulfilling of the following conditions and adhering to the following restrictions

are a condition precedent to the use of the land described in this document during the period set out above.

1. The State shall require its contractor to provide contractor's public liability and property damage insurance in the following amount: $250,000 for all damages arising out of bodily injuries or death of one person, and subject to that limit for each person a total limit of $1,000,000 for each occurrence and $1,000,000 property damage. State shall require its contractor to furnish the Port of Portland with a certificate or a copy of said insurance policy at the Port of Portland's discretion. Such insurance shall be maintained at all times during which State's contractor is working within the temporary easement area. The insurance policy shall provide that the policy or policies shall not be canceled or altered without ten (10) days' notice to the Port of Portland.
2. The State shall require its contractor to conduct its operations within the temporary easement area in such a manner as to not obstruct the railroad track, located within the area or to block the entrance gate to the property to the Port of Portland without the express permission of the Port's engineer or his representative. State shall require its contractor to guarantee that its operations in the temporary easement area will not interfere with Port's use and operation of its shear leg crane. State shall further require its contractor to take all reasonable precautions so that his work within the temporary easement area shall not in any way jeopardize the safety or inte-

grity of the shear leg crane located in the vicinity of the temporary easement area.

3. The operations of State's contractor will require that a breasting dolphin owned by the Port located in the westerly side of the Willamette River be removed during bridge construction. The State shall require its contractor to provide, at no expense to the Port, any and all tugs which may be required to assist and hold a vessel alongside the adjacent dock during loading and unloading operations. Port will give three days' notice to State's contractor prior to such operations. At such time as State's contractor no longer requires equipment in the area of the breasting dolphin, but in no event later than 180 days from the date of this instrument, the State shall require its contractor to replace the breasting dolphin to its original condition.

4. State shall require its contractor to install at contractor's sole expense temporary security fencing and gates to replace permanent fencing and gates removed by contractor. At such time as State's contractor no longer requires equipment in the easement area, but in no event later than 180 days from the date of this instrument, the State shall require its contractor to replace the permanent fencing and gates around Port premises to their present condition.

5. In the event that the supporting structures and scaffolding required by contractor in bridge erection do not allow sufficient clearance for rail car movements required in connection with heavy lifts by Port's

we request in specs clearance for legal

P.U.C. says 22'-6" Vert 8'-6 from L Horiz

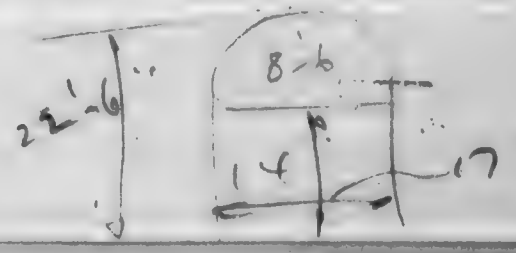
a breasting dolphin owned by the Port located in the westerly side of the Willamette River be removed during bridge construction. The State shall require its contractor to provide, at no expense to the Port, any and all tugs which may be required to assist and hold a vessel alongside the adjacent dock during loading and unloading operations. Port will give three days' notice to State's contractor prior to such operations. At such time as State's contractor no longer requires equipment in the area of the breasting dolphin, but in no event later than 180 days from the date of this instrument, the State shall require its contractor to replace the breasting dolphin to its original condition.

4. State shall require its contractor to install at contractor's sole expense temporary security fencing and gates to replace permanent fencing and gates removed by contractor. At such time as State's contractor no longer requires equipment in the easement area, but in no event later than 180 days from the date of this instrument, the State shall require its contractor to replace the permanent fencing and gates around Port premises to their present condition.

5. In the event that the supporting structures and scaffolding required by contractor in bridge erection do not allow sufficient clearance for rail car movements required in connection with heavy lifts by Port's

we request 22' clearance for legal

P.U.C. says
22'-6" Vert
8'-6 from ℄ Horiz



Check for any right Coast has in Harbor

shear leg crane, the State shall require its contractor to provide an adequate water crane for heavy lifts at other Port berths in the Portland harbor in lieu of the use of Port's shear leg crane, at no cost to Port.

6. State shall require its contractor to indemnify and hold harmless the Port of Portland, as successor in interest to the City of Portland, acting by and through its Commission of Public Docks, and Port's officers, agents and employees from and against any and all loss, liability, damage, claims, demands and actions, including all expenses connected therewith, and attorneys' fees and costs (including attorney's fees and costs on appeal), for bodily injury, including death, or damage to property caused by the negligence of State's contractor, its employees, agents or subcontractors, or damage or loss in any manner resulting directly or indirectly from or arising out of any contractor's operations, whether such injury, death, loss or damage be within or without any construction or easement area.

7. At such time as State's contractor no longer requires equipment in the easement area, but in no event later than 180 days from the date of this instrument, State shall require its contractor to repair any damage to Port property caused by contractor during his use of the temporary easement area, and to restore the property to its present condition.

TO HAVE AND TO HOLD the said right, licenses and easements under the State of Oregon, by and through its State Highway Commission, its successors and assigns.

IN WITNESS WHEREOF, the Port of Portland has caused this instrument to be executed by its Executive Director this day of April, 1971.

PORT OF PORTLAND, a
municipal corporation

_____
Executive Director

STATE OF OREGON)
) ss
County of Multnomah)

On this day of April, 1971, before me, the undersigned, personally appeared E. G. WESTERDAHL II, to me known, who being duly sworn, did say that he is the Executive Director of the Port of Portland and who executed the within and foregoing instrument and acknowledged said instrument to be the free and voluntary deed of the Port of Portland for the uses and purposes therein mentioned and that he was authorized to execute said instrument.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

_____
Notary Public for Oregon
My Commission expires:

April , 1971

In consideration of the granting of the above described easement to the State of Oregon for the use and benefit of Murphy Pacific Enterprises, the undersigned Murphy Pacific Enterprises, a California corporation, hereby agrees to be bound by all the terms and conditions aforementioned.

_____
Title:

(Corporate Seal)

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APR 14 1972
FOR FILING

I-405-8(17)303
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon 97213
April 13, 1971

To: Tom Edwards
Deputy Highway Engineer
State Highway Building
Salem

SUBJECT: W. Fremont Interchange
E. Fremont Interchange
Fremont Bridge
Paint Thickness Measurements

Inorganic zinc prime coat paint thickness readings have been taken in Portland by the Resident Engineer's crews on structural steel shipped from Vancouver, B. C., San Francisco, and Fought's plant in Tigard. The results are as follows:

West Fremont Interchange:

Rust Ban 191			Rust Ban 193		
Mils	No. of Readings	Percent	Mils	No. of Readings	Percent
0 - 0.99	0	0	0 - 0.99	66	3
1 - 1.99	0	0	1 - 1.99	618	28
2 - 2.99	11	1	2 - 2.99	1101	50
3+	919	99	3+	418	19
Total	930	100	Total	2203	100

East Fremont Interchange (From Canron)

Rust Ban 191			Rust Ban 193		
Mils	No. of Readings	Percent	Mils	No. of Readings	Percent
0 - 0.99	24	5	0 - 0.99	531	39
1 - 1.99	244	49	1 - 1.99	554	40
2 - 2.99	199	40	2 - 2.99	226	16
3+	28	6	3+	66	5
Total	495	100	Total	1377	100

East Fremont Interchange (From Fought)

Rust Ban 191

Mils	No. of Readings	Percent
0 - 0.99	0	0
1 - 1.99	0	0
2 - 2.99	1	2
3+	50	98
Total	51	100

Fremont Bridge Superstructure

Mobil Zinc 1

Mils	No. of Readings	Percent
0.- 0.99	0	0
1.- 1.99	0	0
2 - 2.99	4	11
3+	33	89
Total	37	100

Mils — No. Readings — %

0 - 0.99 — 0 — 0
1 - 1.99 — 0 — 0
2 - 2.99 — 5 — 5
3+ — 87 — 95
92 — 100%

If further information or amplification of the above data is desired, please advise.

4/15/16/71 Tests →

0 - 0.99 — 0 — 0
1 - 1.99 — 0 — 0
2 - 2.99 — 1 —
3+ — 54
55 — 100%

Robert L. Schroeder
Metropolitan Engineer

By:

Edward L. Hardt
Assistant Metropolitan Engineer

ELH:pb

cc: A. E. Johnson
Ivan Merchant
John Howard
Robert Shotwell
Robert Cunningham

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APR 14 1971
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
FOR
CONTRACTORS
DEVELOPERS

DONALD M. DRAKE COMPANY
1740 N. W. FLANDERS STREET • PORTLAND, OREGON 97209
TELEPHONE (503) 228-3991

I-405-3(11)303
7216

April 6, 1971

7310
7311
7312
7314

Mr. Tom Edwards
Deputy State Highway Engineer
Oregon State Highway Division
Highway Building
Salem, Oregon 97310

INCLD
A E JOHNSON

Dear Tom:

This will confirm my understanding of our conversation of this date.

In the interest of minimizing our extra costs to the state, we will proceed under the state's direction with the correction of the paint situation on the interior of the box girders so that the finish coat can be applied and forming and pouring operations can be resumed.

We will keep the cost information in accordance with the state's extra work order procedure and we trust the state inspectors will advise us of the procedure for rust and rust stain removal as well as the touch up prime coat required before the final vinyl is applied.

Yours very truly,

DONALD M. DRAKE COMPANY

Franklin G. Drake
President

FGD:mb

cc: R. E. Grant
W. Bugge

NOTED
TOM EDWARDS

RECEIVED
APR 7 1971
OFFICE OF
STATE HIGHWAY ENGINEER

Johnson
cy FHWA 4-8
cy EJ Stendt 4-9-71

aef c

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OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
April 5, 1971

SUBJECT: Fremont Bridge
Erection Procedures

To:
Memo to the Files

NOTED
A. E. JOHNSON

On March 24 and 25, 1971, a meeting was held in the office of the Metropolitan Section to discuss the erection procedures for the Fremont Bridge. Those in attendance are listed on a following page.

The steel erection falls basically into three separate categories:

1. West and East back span erection.

2. Main span erection on Swan Island.

3. Main span lift.

In the erection drawings, the centerline of pin at panel point 10 is reference elevation 0.

In the makeup of splices in the arch, it is planned to use 1/3 torqued bolts plus pins.

In the lateral bracing, 50 percent of the bolts are to be placed and torqued.

Back Span Erection

In the early erection stages the wind chord is temporarily bolted to the pinned columns in order to hold the column.

The temporary strut at PP 9-10 is to be removed after girder segment G1 is in place. The strut must be removed, it is not intended to function in the structural system.

The wind chord restraint is removed after the girder segment is in place.

In the erection procedure each section of the structure is analyzed after each step. It is critical that the steps, as outlined, be followed. Deviation from the erection sequence given would require a complete restudy of the problem.

In the erection drawings the moment curves shown are moment envelopes.

Case 9, as shown on the drawings, is the stress run of the completed structure. Case 9 will be compared against the original design stresses.

The arch sections are erected in a cambered position to allow make up of the columns. The jacks at falsework one are varied to permit column placement. In the overall erection procedure, keep in mind the shortening of the arch rib and lengthening of the tie girder in the completed structure.

In the erection of the orthotropic deck sections, use shims to make up floor beam to tie girder connection.

The erected segment of structure is shifted longitudinally to compensate for the ultimate strain in the tie girder.

There was some concern expressed over the as-fabricated pin linkage at PP 0. The unit was placed by the substructure contractor. The finish and alignment is not as per the plans.

The strut at PP 9.10 is critical in the stability of the PP 10 column during Stage IV - VI.

The tentative erection schedule for the full structure is as follows:

1. West Back Span - April, May, June 1971.

2. East Back Span - August, September, October 1971.

3. Main Span Lift - January or February 1972.

During erection it will be necessary to use A490 bolts at PP 10 due to high erection stresses. These bolts are to be removed and replaced with A325 bolts.

<u>Center Span Erection on Swan Island</u>

The tie girder and deck panels are erected in their true geometric position. All splices are bolted 100 percent.

The arch rib sections are set by adjusting the falsework jacks to the elevations shown on the drawings. Falsework supports CR 1 and 9 are removed to distort the arch and permit placing of the hangers.

There was some discussion of the arch rib stability under wind load with the segment of arch in place but without the lateral system.

To date the erection drawings do not show any details for the arch rib tie-downs at the false bents.

It is critical that the suspender cables are fabricated to their proper length. The cables will be installed slack. The arch rib will take its final true geometric position as determined by the cable lengths.

The adjustment of the jacks at the false bents to the elevations given in the erection drawings permits fit up of the arch rib. As the arch segments are set, the milled joints must be checked. There are several critical steps in the proposed erection plan. One of these is during erection of the long limber arch rib sections.

Center Span Lift

The back spans are rotated to receive the center span. The bearings are shifted to allow for length changes in the structure. The position of the structure at PP 0 and 10 is altered in order to control stress and to accommodate strain changes.

The details of the lift of the center arch span have not been developed to the point where they can be discussed. The contractor and his consultants are studying and testing lifting rod designs and jacks. The tentative plan calls for:

1. 200 ton jacks.
2. 32 rods 4140 cold rolled steel.
3. 2' ± lifts.
4. 6400 tons lift capacity (lift is just under 6000 tons).

There being no further discussion the meeting was adjourned.

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APR 6 1971
OFFICE OF
STATE HIGHWAY ENGINEER

WJH:dh
cc A. E. Johnson
R. O. Cunningham
Edward L. Hardt
Herbert A. Schell, Jr.

Walter J. Hart
Bridge Administration Engineer

PERSONS IN ATTENDANCE

Parsons, Brinckerhoff, Quade & Douglas -

Alfred Hedefine
Louis G. Silano

Oregon State Highway Division

R. O. Cunningham
Jerry Street
Jim Broad
Edward L. Hardt
A. A. Rear
John H. Wood
Ivan D. Merchant
Walter J. Hart

Federal Highway Administration

Herbert A. Schell, Jr.
Roy H. Tokerud (Weds. p.m.)
Wallace H. Bryant (Thurs. a.m.)

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file

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7276

CLEMENTINA LTD.

2177 JERROLD AVENUE · SAN FRANCISCO, CALIFORNIA 94124 · (415) 282-7290
MAILING ADDRESS: P.O. BOX 7680, SAN FRANCISCO, CA. 94119

Murphy Pacific Corporation

Date March 18, 1971

NOTICE WITH YOUR BONDING COMPANY

Re: REQUEST FOR REQUIRED INFORMATION NEEDED TO FILE "~~PRELIMINARY LIEN NOTICE~~"

JOB # NAME: Fremont State Bridge
JOB ADDRESS Portland Oregon

In order to comply with Sections 1190.1 and 1193 of the California Code of Civil Procedure and Section 4210 of the Government Code, as amended, the following information is required as a part of the above contract:

1. OWNER STATE OF OREGON, Division of Highways
(Individual, Partnership, Corporation)
(address)
City SALEM State OREGON Zip

2. GENERAL CONTRACTOR MURPHY PACIFIC CORPORATION
(individual, partnership, corporation)
(address)
City EMERYVILLE State CALIF. Zip

3. LENDING INSTITUTION
(individual, partnership, corporation)
(address)
City State Zip

4. IF PUBLIC AGENCY, NAME Oregon State Hwy Com.
CONTRACT # 7276

5. NAME OF BONDING CO. ~~United Pacific Ins. Co.~~ General Ins. Co. of America
The America Ins. Co.
(address)
City State Zip

I hereby certify that the above information is correct and true.

Floyd Quarry Secty
Signature & Title

RECEIVED
MAR 22 1971
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CALIFORNIA PRELIMINARY NOTICE

SECTION 1193, CODE OF CIVIL PROCEDURE, AND SECTION 421[illegible], GOVERNMENT CODE

YOUR ATTENTION IS DIRECTED TO SECTION 1193 (C) CALIFORNIA CODE OF CIVIL PROCEDURE WHICH REQUIRES US TO NOTIFY YOU "THAT IF BILLS ARE NOT PAID IN FULL FOR LABOR, SERVICES, EQUIPMENT OR MATERIALS FURNISHED, OR TO BE FURNISHED, THE IMPROVED PROPERTY (WHICH IS DESCRIBED HEREON) MAY BE SUBJECT TO MECHANICS' LIENS". (THIS STATEMENT IS APPLICABLE TO PRIVATE WORK ONLY.)

OWNER (NAME OF OWNER OR REPUTED OWNER OR PUBLIC AGENCY)

I-405 1867 30[illegible]

NAME ▶ Highway Dept, State of Oregon

7276 ADDRESS Highway Building

CITY & STATE Salem, Oregon

Fremont Bridge
Cont #69500

CONSTRUCTION LENDER (NAME OF CONSTRUCTION LENDER OR REPUTED CONSTRUCTION LENDER, IF ANY)

NAME ▶ —

ADDRESS

CITY & STATE

ORIGINAL CONTRACTOR (NAME OF ORIGINAL CONTRACTOR OR REPUTED CONTRACTOR)

NAME ▶ Murphy Pacific Corp.

ADDRESS 4300 East Shore Hiway

CITY & STATE Emeryville, Calif.

YOU ARE HEREBY NOTIFIED THAT THE UNDERSIGNED HAS FURNISHED OR WILL FURNISH

Steel Piping - Fittings

(DESCRIPTION OF THE LABOR, SERVICES, EQUIPMENT OR MATERIALS FURNISHED OR TO BE FURNISHED)

FOR THE BUILDING, STRUCTURE OR OTHER WORK OF IMPROVEMENT LOCATED AT:

Fremont Bridge, Portland, Oregon
Stadium Freeway

(ADDRESS OR DESCRIPTION OF JOBSITE SUFFICIENT FOR IDENTIFICATION)

THE NAME AND ADDRESS OF THE PERSON WHO CONTRACTED FOR THE PURCHASE OF SUCH LABOR, SERVICES, EQUIPMENT OR MATERIAL IS: (FOR PUBLIC WORK – THE NAME OF THE PARTY TO WHOM SAID LABOR, SERVICES, EQUIPMENT OR MATERIALS WERE FURNISHED OR ARE TO BE FURNISHED IS:)

NAME Murphy Pacific Corp, Jay Murphy

ADDRESS 4300 East Shore Highway, Emeryville Calif.

NAME OF PERSON OR FIRM FURNISHING LABOR, SERVICE, EQUIPMENT OR MATERIALS	DATED
Pacific Pipe Company	Mar 16, 1971
BY X [signature] ADDRESS [illegible] 3351 [illegible]	

NOTE: THIS SECTION MUST BE FILLED OUT ON SHEETS 3 AND 4

OWNER'S COPY

NOTED
FLOYD QUERY

RECEIVED
MAR 26 1971

CALIFORNIA PRELIMINARY NOTICE

In Accordance With Section 1193, California Code Of Civil Procedure and Section 4210, California Government Code

FOR FILING

F 405-8(07) 303
7276

CONSTRUCTION LENDER or
Reputed Construction Lender, if any

First Western Bank
235 Montgomery St.
San Francisco, Calif.
and/or General Insurance Co. of America
Attn: Park Johnson
450 Sansome st. - San Francisco
Calif.

FOLD HERE

OWNER COPY

OWNER or
or Reputed Owner
(on private work)

PUBLIC AGENCY
(on public work)

State of Oregon
State Capital Bldg.
Oregon Hiway Dept.
Salem, Oregon

FOLD HERE

ORIGINAL CONTRACTOR or
Reputed Contractor, if any

Murphy/Pacific Enterprises
4300 Eastshore Hiway
Emeryville, Calif.

NOTED
FLOYD QUERY

YOU ARE HEREBY NOTIFIED THAT . . .

Ducommun Metals & Supply Co.
(name of person or firm furnishing labor, services, equipment or material)

2550 7th St.
Berkeley, Calif. 94710
(address of person or firm furnishing labor, services, equipment or material)

has furnished or will furnish labor, services equipment or materials of the following general description:

Structural Steel & Metals supply
(general description of the labor, services, equipment or material furnished or to be furnished)

for the building, structure or other work of improvement located at: Fremont Bridge-Portland Ore
(address or description of job site sufficient for identification)

The name of the person or firm who contracted for the purchase of such labor, services, equipment or material is:

Murphy/Pacific Enterprises
(name and address of person or firm)
4300 Eastshore Hiway
Emeryville, Calif.

An estimate of the total price of the labor, services, equipment or materials furnished or to be furnished is:

$ [redacted]
(this must be furnished to construction lender—optional as to owner or contractor)

If bills are not paid in full for labor, services, equipment or materials furnished or to be furnished, the improved property may be subject to mechanics' liens.

Dated: March 15, 1971

Edwin E Webster
(signature)
Edwin E. Webster Credit Mgr.
(title)

This form is recognized by the following organizations:

BUILDING MATERIAL DEALERS CREDIT ASSOCIATION
CALIFORNIA BUILDING MATERIAL DEALERS ASSN.
CALIFORNIA LICENSED CONTRACTORS ASSOCIATION
LUMBER ASSOCIATION OF SOUTHERN CALIFORNIA

RECEIVED
MAR 1 - 1971

FOR FILING

I-405-8(17)343
7276

CALIFORNIA PRELIMINARY NOTICE

In accordance With Section 1193, California Code Of Civil Procedure and Section 4216, California Government Code

YOU ARE HEREBY NOTIFIED THAT . . .

CONSTRUCTION LENDER or
Reputed Construction Lender, if any

[redacted]

FOLD HERE

Contract
7276

OWNER

OWNER or
or Reputed Owner
(on private work)

PUBLIC AGENCY
(on public work)

COPY

STATE HIGHWAY DEPT. OF THE STATE
OF OREGON (Project I-405-8-17303)
Highway Bldg.
Salem, Oregon

FOLD HERE

RECEIVED
MAR 1 - 1971
OREGON
STATE HIGHWAY COMMISSION

ORIGINAL CONTRACTOR or
Reputed Contractor, if any

Murphy Pacific Enterprises
4300 E. Shore Highway
Emeryville, California

NOTED
LOYD OUERY

GENERAL PIPE & SUPPLY CO., INC.
(name of person or firm furnishing labor, services, equipment or material)

222 East Manville Street
(address of person or firm furnishing labor, services, equipment or material)

Compton, Calif.

has furnished or will furnish labor, services equipment or materials of the following general description:

Carbon Steel, Shapes, Plates and Bar Materials
(general description of the labor, services, equipment or material furnished or to be furnished)

for the building, structure or other work of improvement

Erection of Superstructure of Fremont Bridge
located at:
(address or description of job site sufficient for identification)

Portland, Oregon

The name of the person or firm who contracted for the purchase of such labor, services, equipment or material is:

Murphy-Pacific

4300 E. Shore Highway

Emeryville, California
(address of above person or firm)

An estimate of the total price of the labor, services, equipment or materials furnished or to be furnished is:

$[redacted]

If bills are not paid in full for labor, services, equipment or materials furnished or to be furnished, the improved property may be subject to mechanic's liens and/or stop notice.

Dated: February 24, 1971

(signature)

(title)
Morris M. Marcus, Credit Admr.

This form is furnished by:

GENERAL PIPE & SUPPLY CO., INC.
222 E. MANVILLE STREET
COMPTON, CALIFORNIA 90224

RECEIVED
MAR 31 1971
FOR FILING

I-405-8(17)303
7276

44

2-16-71

MISC. CONTRACTS and
AGREEMENTS No. 4164

February 16, 1971

Fields, McBride, Gordon and Rees
Law Offices
220 Montgomery Street
San Francisco, California 94104

Attention: R. W. Fields

Gentlemen:

Attached is a fully executed copy of an Assignment directing all payments on Contract 7276 with Murphy Pacific Enterprises for construction of the Fremont Bridge be forwarded to the contractor and mailed to First Western Bank and Trust Company, 235 Montgomery Street, San Francisco, California 94104 Attention: Donald F. Hamm.

A fully executed copy of this Assignment has been retained for the Commission's files.

Very truly yours,

Floyd Ousey, Secretary
OREGON STATE HIGHWAY COMMISSION

fhm
Att.

cc Murphy Pacific Enterprises
First Western Bank & Trust Co.

V. E. Skoog

noted on card

TOM McCALL
GOVERNOR

OREGON STATE HIGHWAY DIVISION

AGENDA
FEB 16 1971
4 u

HIGHWAY BUILDING • SALEM, OREGON • 97310

February 11, 1971

Item, on agenda page
affid statement authorizing
sig. (Typed on page)
76

Oregon State Highway Commission

Gentlemen:

On July 3, 1969, the Commission approved Contract No. 7276 for construction of the Fremont Bridge between Murphy Pacific Enterprises and the State of Oregon.

In 1970, one of the principals of the company died. In order to insure continued financing and orderly construction of the project, the contractor, Murphy Pacific Enterprises, with consent of all sureties, has established a trust account in the First Western Bank and Trust Company, to be utilized for the sole purpose of paying the necessary labor and suppliers for construction of this project. They have presented an agreement directing that all payments for contract work performed be forwarded to the contractor in care of the First Western Bank and Trust Company, 235 Montgomery Street, San Francisco, California 94104, Attention: Donald F. Hunn.

I recommend your approval of this agreement and request authority for the Secretary to execute the agreement for and on your behalf.

This matter will be on the agenda for your consideration at the February 16 meeting.

Very truly yours,

R. L. Porter
State Highway Engineer

cc: Floyd Query
Tom Edwards
A. E. Johnson
V. D. Wolfe
F. D. Morgan
Ivan Merchant
R. L. Schroeder

(A)
2 COPIES TO BE SIGNED
By Secretary

NOTED
FLOYD QUERY

RECEIVED
FEB 5 1971

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

I 405-8(17)303

TO : 121 Mr. R. L. Porter, State Highway Engineer
Salem, Oregon

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

DATE: February 5, 1971

In reply refer to: 08-35-DA

SUBJECT: Oregon Projects I-405-8(17)303, I-405-8(20)303, I-405-8(22)304
Fremont Bridge, West Fremont Interchange, and East Fremont Interchange
Signing Revisions

Your December 18 letter indicated that for various reasons it is not feasible to make revisions in the signing on the subject projects as suggested in our December 7 memorandum. We believe there are revisions which can be made in accordance with the Interstate Sign Manual which would improve the signing. We will arrange to discuss these revisions with you.

2-12-71

REFERRED TO
Crandall
BY ASST. STATE HWY. ENGR.

NOTED
TOM EDWARDS

Johnson

RECEIVED
FEB 8 '71
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
FEB 5 1971

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

I-405-8(17)303

TO : Mr. R. L. Porter, State Highway Engineer
121 Salem, Oregon

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

DATE: February 5, 1971

In reply refer to: 08-35-DA

SUBJECT: Oregon Projects I-405-8(17)303, I-405-8(20)303, I-405-8(22)304
Fremont Bridge, West Fremont Interchange, and East Fremont Interchange
Signing Revisions

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2-12-71

REFERRED TO
Crandall
BY ASST. STATE HWY. ENGR

Johnson

NOTED
TOM EDWARDS

RECEIVED
FEB 9 1971
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
FEB 8 - 1971

CALIFORNIA PRELIMINARY NOTICE

In Accordance With Section 1193, California Code Of Civil Procedure and Section 4218, California Government Code

2-5-71

FOR FILING

I-405-8(17)363

-1276

YOU ARE HEREBY NOTIFIED THAT . . .

CONSTRUCTION LENDER or
Reputed Construction Lender, if any

[redacted]

GENERAL PIPE & SUPPLY CO., INC.
(name of person or firm furnishing labor, services, equipment or material)

222 East Manville Street
(address of person or firm furnishing labor, services, equipment or material)

Compton, Calif.

has furnished or will furnish labor, services equipment or materials of the following general description:

Carbon Steel, Shapes, Plates and Bar Materials
(general description of the labor, services, equipment or material furnished or to be furnished)

for the building, structure or other work of improvement

Contract #I-4058(17) 303

located at: **Fremont Bridge**
(address or description of job site sufficient for identification)

Portland, Oregon

The name of the person or firm who contracted for the purchase of such labor, services, equipment or material is:

MURPHY PACIFIC

4300 E. Shore Highway

Emeryville, California
(address of above person or firm)

An estimate of the total price of the labor, services, equipment or materials furnished or to be furnished is:

$ [redacted]

If bills are not paid in full for labor, services, equipment or materials furnished or to be furnished, the improved property may be subject to mechanic's liens and/or stop notice.

Dated: **February 5, 1971**

Morris M. Marcus, Credit Admr.
(signature) (title)

This form is furnished by:

GENERAL PIPE & SUPPLY CO., INC.
222 E. MANVILLE STREET
COMPTON, CALIFORNIA 90224

FOLD HERE

OWNER

OWNER or
or Reputed Owner
(on private work)

PUBLIC AGENCY
(on public work)

COPY

STATE OF OREGON
State Highway Department
Highway Building
Salem, Oregon

FOLD HERE

ORIGINAL CONTRACTOR or
Reputed Contractor, if any

MURPHY PACIFIC
4300 E. Shore Highway
Emeryville, California

NOTED
LOYD QUERY
2-8-71

TE

7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

February 4, 1971
Portland, Oregon

SUBJECT: Schedule of Erection

To: Memo to Files

On February 3, 1971 Mr. Choate of Murphy Pacific visited this office. He stated that he now has the first two castings under his control and he can work up a realistic schedule of erection. He gave me the following tentative schedule:

Early in March - Set lower castings on pier 1W.

April 5 - Begin erection on pier 1W

June 30 - Complete PP 1 thru 14 (West backspan)

July - Drive falsework at Swan Island - Erect Falsework piers 1E and 2E
Marine Boss back to San Francisco to load steel for east backspan

August - Begin erection of East backspan

October - Complete East Backspan

November-December - Erect center span at Swan Island

Late December or early January - Jack main span into position

R.C. Cunningham
Resident Bridge Engineer

cc: I.I. Merchant
R.L. Schroeder
L. Silano

Copy for B-E

NOTED
TOM EDWARDS

RECEIVED
FEB 5 1971
BRIDGE DIVISION

RECEIVED
FEB 8 - 1971

OREGON STATE HIGHWAY DIVISION

NOTED
A. E. JOHNSON

I-405-8(17)303

HIGHWAY BUILDING • SALEM, OREGON • 97310

February 3, 1971

Murphy Pacific Enterprises
4300 Eastshore Highway
Emeryville, California

NOTED
A. E. JOHNSON

Gentlemen:

Fremont Bridge Superstructure
Contract 7276
Floor Beam Splice Repairs

On January 20 a copy of a letter dated January 18 was received from American Bridge Company regarding the floor beam splices on the orthotropic deck of the subject project. This letter enclosed copies of a sheet number 1151 indicating proposed revisions to the welded splices. This drawing indicates 2 - 3" x 3/8 x 0' - 8" splice plates welded to the top of the bottom flange. This method of repair is not acceptable.

In the latter part of October a meeting was held in this office regarding corrective measures to the floor beam splice. At that time it was indicated that because of the critical nature and location of this welded splice that the State would insist on a full penetration butt weld ground smooth and quality as specified on the plans and in the specifications. Also an agreement was made that the State would have the deck sections re-shot and if the welds were acceptable would absorb the costs thereof. If there had to be repairs made Murphy-Pacific would pay for re-shots of the repaired splices, the weld repairs and the check x-rays after repair. Refer to "Memo to the Files" dated November 2, 1970 copies of which were sent to all parties involved. The State's attitude has not changed and the quality of weld required by the contract specifications must be met.

Your material supplier, American Bridge Company, have had a chance to review the x-ray film taken by Pittsburgh Testing Laboratory on the deck sections stored on Swan Island. On receipt of this film January 27 this office has made a study of the film to make our own determination of weld quality. I am attaching hereto two lists covering deck sections in spans 1 to 16 inclusive and 36 to 47 inclusive. The attached list for deck sections 1 to 16 inclusive supersedes the list sent you with R. O. Cunningham's letter of January 18, 1971. Deck sections 1 through 16 indicate that there are 24 locations on which repairs must be made and that there are 26 additional locations on which a check must be made to determine possible surface or

internal defects for repair and which cannot be determined positively from the film. The above-mentioned defects are in deck sections 1 through 16 inclusive on which the weld grinding was completed at the Swan Island storage yard.

A check of the records indicates that 12 additional sections were x-rayed in the South San Francisco plant prior to grinding of the welds. Again, in order to be assured that the weld quality required by the specifications had been provided by your material supplier check x-rays were taken at the Swan Island storage yard. These x-rays indicate that there are 21 locations which must be repaired and 18 locations on which an additional check must be made to determine whether the defects indicatedon the film are surface defects or internal defects requiring repair.

X-ray film to indicate the above-mentioned repair and check locations will be marked and sent to Mr. R. O. Cunningham, Resident Engineer. This film may be used on the project site in conjunction with your ultrasonic testing to determine the exact location of each weld defect.

The January 18, 1971, letter from American Bridge Company mentioned that the detailed shop drawings were approved without the grind flush note and referred also to "the untimeliness of raising the question involving grinding and a second radiographic inspection of the welds in the field". The contract drawings are very explicit in the type of weld to be made in the floor beam tension flange on the bridge centerline. The fact that a lower class of weld was detailed on the shop drawings to facilitate fabrication and inadvertently checked does not obligate the State to accept the lowered quality of construction. The specifications 410-3.22(409) are also very explicit as to the quality of radiographic quality tension welds and there has been no change in this contract requirement.

For the above-mentioned reason any repairs that must be made to these deck sections to provide the quality of workmanship required by the contract must be borne by you or your material suppliers. Also repairs and check x-rays must be made prior to erection. Mr. Cunningham will be available to go over the required work.

Very truly yours,

R. L. Porter
State Highway Engineer
By

Ivan D. Merchant
Bridge Engineer

IDM/dh/ag (Attach.)
cc: American Bridge Co. (w/attach.)
Parsons, Brinckerhoff, Quade & Douglas (w/attach.)
A. E. Johnson (w/attach.)
R. L. Schroeder (w/ attach.)
R. O. Cunningham (w/attach.)

RECEIVED
FEB 3 1971
OFFICE OF
STATE HIGHWAY ENGINEER

CLIENT: Oregon State Highway Department
Bridge Division
Salem, Oregon

P.O. Fremont Bri[illegible] - Mainspan
SPECIFICATIONS: OSHD
RADIOGRAPHIC SOURCE: Ir 192
MATERIAL: Steel
OTHER:

Radiographic 100% | X | Penetrant
Radiographic Spot | | Ultrasonic
Magnetic Particle | | OTHER

EXAMINATION OF THE FOLLOWING:
Orthotropic deck sections, spans 36 thru 47
Flanges - floor beam bottom splice

IDENTIFICATION			OK	CHECK	REPAIR
101 Span 40	BFL	1	X		
	BFI	2			X
	BF2	1		X	
		2		X	
	BF3	1		X	
		2		X	
	BF4	1	X		
		2	X		
102-39	BF1	1		X	
		2			X
	BF2	1			X
		2	X		
	BF3	1			X
		2	X		
	BF4	1	X		
		2		X	
	BF5	1	X		
		2			X
103-38	BF1	1	X		
		2		X	
	BF2	1-2			X
		2-3	X		
	BF3	1	X		
		2		X	
103-38	BF4	1	X		
		2	X		
	BF5	1		X	
		2			X
104-37	BF1	1	X		
	BF1	2	X		
	BF2	1		X	
	BF2	2	X		
	BF3	1	X		
		2	X		
	BF4	1	X		
		2	X		
	BF5	1	X		
		2	X		
105-36	BF1	1			X
		2	X		
	BF2	1	X		
		2	X		
	BF3	1			X
		2	X		
	BF4	1	X		
		2		X	

O.K. - Welds require no further inspection.

CHECK - Areas marked on films are to be examined and if defective they shall be repaired and reradiographed.

REPAIR - Defects marked on films are to be repaired according to 410-3.22(410) and reradiographed.

Owner: Oregon State Highway Dept.
(Continued from first page)

Project: Fremont Bridge - Mainspan
Specification No.:
Radiation Source:
Material:
Other:

Radiographic 100%		Penetrant	
Radiographic Spot		Ultrasonic	
Magnetic Particle		Other	

Examination of the following:

Identification			OK	Check	Repair
201-47	BF1	1	X		
		2	X		
	BF2	1	X		
		2	X		
	BF3	1	X		
		2		X	
	BF4	1	X		
		2		X	
	BF5	1			X
		2	X		
202-46	BF1	1	X		
		2	X		
	BF2	1	X		
		2	X		
	BF3	1			X
		2		X	
	BF4	1	X		
		2	X		
203-45	BF1	1		X	
		2		X	
	BF2	1	X		
		2	X		
	B F3	1	X		
		2	X		
203-45	BF4	1			X
		2	X		
204-44	BF1	1		X	
		2	X		
	BF2	1		X	
		2	X		
	BF3	1	X		
		2	X		
205-43	BF1	1	X		
		2	X		
	BF2	1			X
		2			X
	BF3	1	X		
		2	X		
	BF4	1			X
		2	X		
206-42	BF1	1			X
		2	X		
	BF2	1	X		
		2	X		
	BF3	1	X		
		2			X
	B F4	1	X		
		2			X

O.K. - Welds require no further inspection.

CHECK - Areas marked on films are to be examined and if defective they shall be repaired and reradiographed.

REPAIR - Defects marked on films are to be repaired according to 410-3.22(410) and reradiographed.

CLIENT
Oregon State Highway Dept.
(Continued from first page)

PROJECT Fremont Bridge - Mainspan
SPECIFICATION NO.
RADIATION SOURCE
MATERIAL
OTHER

Radiographic 100%		Penetrant	
Radiographic Spot		Ultrasonic	
Magnetic Particle		OTHER	

EXAMINATION OF THE FOLLOWING:

IDENTIFICATION			OK	CHECK	REPAIR
201-47	BF1	1	X		
		2	X		
	BF2	1	X		
		2	X		
	BF3	1	X		
		2		X	
	BF4	1	X		
		2		X	
	BF5	1			X
		2	X		
202-46	BF1	1	X		
		2	X		
	BF2	1	X		
		2	X		
	BF3	1			X
		2		X	
	BF4	1	X		
		2	X		
203-45	BF1	1		X	
		2		X	
	BF2	1	X		
		2	X		
	B F3	1	X		
		2	X		
203-45	BF4	1			X
		2	X		
204-44	BF1	1		X	
		2	X		
	BF2	1		X	
		2	X		
	BF3	1	X		
		2	X		
	BF4	1	X		
		2		X	
205-43	BF1	1	X		
		2	X		
	BF2	1			X
		2			X
	BF3	1	X		
		2	X		
	BF4	1			X
		2	X		
206-42	BF1	1			X
		2	X		
	BF2	1	X		
		2	X		
	BF3	1	X		
		2			X
	B F4	1	X		
		2			X

O.K. - Welds require no further inspection.

CHECK - Areas marked on films are to be examined and if defective they shall be repaired and reradiographed.

REPAIR - Defects marked on films are to be repaired according to 410-3.22(410) and reradiographed.

CLIENT

Oregon State Highway Dept.
(Continued from second page)

PROJECT Fremont Bridge - Mainspan

SPECIFICATION NO.

RADIATION SOURCE

MATERIAL

OTHER

EXAMINATION OF THE FOLLOWING:

Radiographic 100%		Penetrant	
Radiographic Spot		Ultrasonic	
Magnetic Particle		OTHER	

IDENTIFICATION			O.K	CHECK	REPAIR	IDENTIFICATION - REMARKS	INTERPRETATION WITHIN SPEC.	INTERPRETATION BEYOND SPEC.
207-41	BF1	1	X					
		2	X					
	BF2	1			X			
		2	X					
	BF3	1	X					
		2	X					
	BF4	1			X			
		2			X			

O.K. - Welds require no further inspection

CHECK - Areas marked on films are to be examined and if defective they shall be repaired and reradiographed.

REPAIR - Defects marked on films are to be repaired according to 410-3.22(410) and reradiographed.

CLIENT
Oregon State Highway Department
Bridge Division
Salem, Oregon

Attention: Ivan D. Merchant

PROJECT: Fremont Bridge - Mainspan
SPECIFICATION NO.: OSHD
RADIATION SOURCE: Ir 192
MATERIAL: Steel
OTHER:

Radiographic 100%	X	Penetrant	
Radiographic Spot		Ultrasonic	
Magnetic Particle		OTHER	

EXAMINATION OF THE FOLLOWING:
Deck Sections - Bottom Flange Splices
Spans 1-16

IDENTIFICATION			O.K.	Check	Repair
Section - #10					
103BF1	1		X		
	2		X		
103BF2	1-2		X		
	2-3		X		
103BF3	1			X	
	2		X		
103BF4	1		X		
	2		X		
103BF5	1		X		
	2		X		
Section - #11					
104BF1	1		X		
	2		X		
104BF2	1			X	
	2				X
104BF3	1		X		
	2		X		
104BF4	1				X
	2		X		
104BF5	1		X		
	2		X		

IDENTIFICATION	#12		O.K.	Check	Repair
105BF1	1			X	
	2		X		
105BF2	1			X	
	2			X	
105BF3	1		X		
	2				X
105BF4	1			X	
	2				X
	#13				
106BF1	1		X		
	2		X		
106BF2	1		X		
	2		X		
106BF3	1		X		
	2		X		
106BF4	1			X	
	2			X	

O.K. - Welds require no further inspection.

CHECK - Areas marked on films are to be examined and if defective they shall be repaired and reradiographed.

REPAIR - Defects marked on films are to be repaired according to 410-3.22(410) and reradiographed.

CLIENT
Oregon State Highway Department
(Continued from first page)

PROJECT
Fremont Bridge - Mainspan

SPECIFICATION NO.

RADIATION SOURCE

MATERIAL

OTHER

Radiographic 100%	X	Penetrant	
Radiographic Spot		Ultrasonic	
Magnetic Particle		OTHER	

EXAMINATION OF THE FOLLOWING:

IDENTIFICATION			O.K.	Check	Repair
Section	#1				
201BF1	1				X
	2				X
201BF2	1		X		
	2				X
201BF3	1				X
	2			X	
201BF4	1			X	
	2		X		
201BF5	1				X
	2			X	
	#2				
202BF1	1		X		
	2				X
202BF2	1			X	
	2		X		
202BF3	1		X		
	2		X		
202BF4	1				X
	2		X		

IDENTIFICATION		O.K.	Check	Repair
	#3			
203BF1	1			X
	2			X
203BF2	1	X		
	2	X		
203BF3	1			X
	2		X	
203BF4	1			X
	2			X
	#4			
204BF1	1	X		
	2	X		
204BF2	1	X		
	2	X		
204BF3	1			X
	2		X	

O.K. - Welds require no further inspection.

CHECK - Areas marked on films are to be examined and if defective they shall be repaired and reradiographed.

REPAIR - Defects marked on films are to be repaired according to 410-3.22(410) and reradiographed.

CLIENT
Oregon State Highway Department
(Continued from second page)

PROJECT Fremont Bridge - Mainspan
SPECIFICATION NO.
RADIATION SOURCE
MATERIAL
OTHER

Radiographic 100%	X	Penetrant	
Radiographic Spot		Ultrasonic	
Magnetic Particle		OTHER	

EXAMINATION OF THE FOLLOWING:

IDENTIFICATION			OK	CHECK	REPAIR
Section	#5				
205BF1	1			X	
	2		X		
205BF2	1			X	
	2		X		
205BF3	1			X	
	2		X		
205BF4	1			X	
	2		X		
	#6				
206BF1	1			X	
	2		X		
206BF2	1		X		
	2				X
206BF3	1		X		
	2		X		
206BF4	1		X		
	2		X		

IDENTIFICATION	#7	OK.	CHECK	REPAIR
207BF1	1	X		
	2	X		
207BF2	1	X		
	2	X		
207BF3	1		X	
	2	X		
207BF4	1	X		
	2	X		
	#8			
208BF1	1	X		
	2		X	
208BF2	1	X		
	2	X		
208BF3	1	X		
	2	X		
208BF4	1		X	
	2	X		

O.K. - Welds require no further inspection.

CHECK - Areas marked on films are to be examined and if defective they shall be repaired and reradiographed.

REPAIR - Defects marked on films are to be repaired according to 410-3.22(410) and reradiographed.

Letter

Oregon State Highway Department
(Continued from third page)

PROJECT

SPECIFICATION NO.

RADIATION SOURCE

MATERIAL

OTHER

Radiographic 100%	X Penetrant	
Radiographic Spot	Ultrasonic	
Magnetic Particle	OTHER	

EXAMINATION OF THE FOLLOWING:

IDENTIFICATION		OK	CHECK	REPAIR
Section	#9			
209BF1	1	X		
	2		X	
209BF2	1	X		
	2			X
209BF3	1		X	
	2		X	
209BF4	1			X
	2	X		
209BF5	1	X		
	2	X		
	#14			
501BF1	1			X
	2	X		
501BF2	1		X	
	2			X
501BF3	1	X		
	2	X		
501BF4	1	X		
	2	X		

IDENTIFICATION	#15	OK	CHECK	REPAIR
502BF1	1			X
	2	X		
502BF2	1	X		
	2	X		
502BF3	1	X		
	2	X		
502BF4	1	X		
	2	X		
	#16			
601BF1	1	X		
	2			X
601BF2	1	X		
	2	X		
601BF3	1	X		
	2	X		
601BF4	1	X		
	2	X		

O.K. - Welds require no further inspection.

CHECK - Areas marked on films are to be examined and if defective they shall be repaired and reradiographed.

REPAIR - Defects marked on films are to be repaired according to 410-3.22(410) and reradiographed.

RECEIVED
1971

SAFECO INSURANCE COMPANIES

GENERAL INSURANCE COMPANY OF AMERICA
SURETY DEPARTMENT · 450 SANSOME STREET, SAN FRANCISCO, CALIFORNIA 94111 – TELEPHONE (415) 392-8011

I-405-8(17)303

January 4, 1971

7276

cc: United Pacific Insurance Co.
Tacoma, Washington

Firemen's Fund
San Francisco, California

Floyd Query, Secretary
Oregon State Highway Commission
Salem, Oregon 97310

Gentlemen:

Re: Murphy-Pacific Corporation
Claim of Metallurgical Engineers, Inc.

Thank you for your letter dated December 11, 1970, concerning the Notice of Claim of Metallurgical Engineers, Inc., of $6,376 concerning the Murphy-Pacific Enterprises Contract #7276.

We have been advised that the above amount has been paid by the Murphy-Pacific Corporation on December 10, 1970.

Very truly yours,

GENERAL INSURANCE COMPANY OF AMERICA

By A. A. Kostelic
A. A. Kostelic, Surety Claims

AAK/kh

NOTED
FLOYD QUERY

Ck already rec- info- that claim was paid

RECEIVED
JAN 6 1971
OREGON
STATE HIGHWAY COMMISSION

NOTED
C. W. HEAD

I-405-8(17) Fremont Bridge Sec., Stadium 1969
303 Freeway, in Portland
#7276 (Superstructure) Folder #2

DEC 22 1970

FOR

I-405-8(17)303
7276

December 22, 1970

Dusenbery, Martin, Bischoff & Templeton
Attorneys At Law
1107 Standard Plaza
Portland, Oregon 97204

Attention: Richard L. Biggs

Gentlemen:

Thank you for your letter of December 17, 1970, informing us that the claim of Metallurgical Engineers, Inc., has now been fully paid.

This appears to be in reference to their claim filing against Murphy Pacific Enterprises Contract No. 7276 for superstructure of the Fremont Bridge in Multnomah County. Our records indicate that this claim was for engineering services in the amount of $6,376.

This information is being noted in our records, and we will advise the sureties and the prime contractor of the receipt of your letter.

Very truly yours,

Floyd Quesy, Secretary
OREGON STATE HIGHWAY COMMISSION

CWH:dr

cc General Insurance Co. of America
Portland Service Office
920 S. W. 6th
Portland, Oregon 97204

United Pacific Insurance Co.
Fidelity - Surety Department
P. O. Box 1216
Tacoma, Washington 98401

American Insurance Co.
421 S. W. Washington St.
Portland, Oregon 97205

Murphy Pacific Enterprises
P. O. Box 32007
Oakland, California 94623

bc Commission

NOTED ON CARD
12-22-70 dr.

VERNE DUSENBERY
JEROME S. BISCHOFF
WILLIAM C. MARTIN
DAVID P. TEMPLETON
RICHARD L. BIGGS
LLOYD B. ERICSSON
FREDERICK T. SMITH
ROBERT E. GLASGOW
CHARLES ROBINOWITZ

DUSENBERY, MARTIN, BISCHOFF & TEMPLETON
ATTORNEYS AT LAW
1107 STANDARD PLAZA
PORTLAND, OREGON 97204
TELEPHONE 224-3113

OUR CABLE ADDRESS
"DUSLAW"
PORTLAND, OREGON

December 17, 1970

Mr. Harry Czyzewski
2340 S. W. Canyon Road
Portland, Oregon

Re: Murphy Pacific Corporation

Dear Harry:

Confirming a telephone call from Mrs. Jones in your office, Murphy Pacific Corporation has fully paid its account.

Very truly yours,

Richard L. Biggs

RLB:erg
cc. Oregon State Highway Division

RECEIVED
DEC 21 1970
OREGON
STATE HIGHWAY COMMISSION

RECEIVED
DEC 18 1970
FOR FILING

I-405-8(17)305
7276

December 18, 1970

Mr. R. E. Simpson
Division Engineer
Federal Highway Administration
Post Office Box 300
Salem, Oregon 97308

Dear Mr. Simpson:

Re: 08-35-DA

Your letter of December 7 made several comments comparing the requirements of the new "Interstate Sign Manual" with signing currently under contract at the East and West Fremont Interchanges, as well as the Fremont structure proper.

The entire signing plan for this section is extremely complex and was worked out over a long period of time by Mr. Tom Edwards, Mr. L. E. George and Mr. Gordon Brooks, previously of your office. Not only the sign messages and sign sequences are critical, but the physical dimensions of the signs themselves are critical with respect to vertical clearances. This is particularly true on the bottom deck of the Marquam Bridge.

In addition to receiving approval from your office during the preliminary design stages for this signing, various county and city governmental units have approved the signs as they are now contracted. It is our opinion that it is not feasible to make revisions in the signing on these three contracts.

Your letter also suggests that the practice of interchange numbering be instituted. The mile-posting system in Oregon started in the early 1930's, and the entire record-keeping system of the Highway Division is based upon our current mile-posting plan.

As you know, to number the interchanges according to current standards would require a reversal of the mile posts on our Interstate System, which would in turn require a complete change in our record-keeping system. The problems generated by this change will require study to determine a suitable method of correlation of records.

When the Highway Division has evolved a suitable solution for the problems that will arise, we will give further consideration to interchange numbering.

Very truly yours,

R. L. Porter
State Highway Engineer

By

F. B. Klaboe
Assistant State Highway Engineer

cc: R. L. Porter
Tom Edwards
V. D. Wolfe
F. B. Crandall

LEG:mk sr

RECEIVED
DEC 29 1970

Claim 4561

FILED
DEC 14 1970
CLAY MYERS
SECRETARY OF STATE

filed

NOTED ON CARD
fw 12-28-70

OREGON STATE HIGHWAY DIVISION

I-405-8(17)303
1276

HIGHWAY BUILDING • SALEM, OREGON • 97310

December 11, 1970

Dasenbery, Martin, Beatty,
Hinshaff & Templeton
Attorneys at Law
1107 Standard Plaza
Portland, Oregon 97204

Attention: Richard L. Riggs

Gentlemen:

This is to acknowledge receipt of your letter of December 7 and attached Notice of Claim of Metallurgical Engineers, Inc., which states that Murphy Pacific Corporation owes them for engineering services in the amount of $6,376.

This appears to be in connection with the Murphy Pacific Enterprises Contract No. 7276 for the superstructure on the Fremont Bridge of the Stadium Freeway in Multnomah County.

The General Insurance Company of America, United Pacific Insurance Company, and The American Insurance Company furnished the performance bond on this contract. We will advise them of the receipt of your claim and we will also forward it to the Secretary of State for filing.

Please advise this office when this claim has been satisfied.

Very truly yours,

Floyd Quary, Secretary
OREGON STATE HIGHWAY COMMISSION

cc Murphy Pacific Enterprises
General Ins. Co. of America
United Pacific Ins. Co.
The American Ins. Co.

NOTED
C. W. HEAD

Hon. Clay Myers - Please acknowledge receipt of the attached claim on the enclosed copy of this letter

NOTICE OF CLAIM

TO: State of Oregon
Oregon State Highway Division

Notice is hereby given that the undersigned Metallurgical Engineers, Inc., an Oregon corporation, has a claim for engineering services performed by employees of the undersigned in the sum of $6,376.00 against the bond taken from Murphy-Pacific Corporation and Safeco Insurance Company and General Insurance Company of America for the work of constructing the Fremont Bridge and Stadium Freeway in the City of Portland, State of Oregon.

METALLURGICAL ENGINEERS, INC.

By Harry Czyzewski
Harry Czyzewski, President

RECEIVED
JAN 7 1971

Form FHWA-121 (12-67)

UNITED STATES GOVERNMENT

Memorandum

I-405-8(17)303
1276

TO : Mr. R. L. Porter, State Highway Engineer
Salem, Oregon
Attention: Mr. A. E. Johnson

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

DATE: December 9, 1970

In reply refer to: 08-35.6/439.1

SUBJECT: Statewide Inspection-in-Depth Summary, No. 35-70-EID(4S)34
Structural Steel Fabrication

Through the construction season of 1970 we conducted a series of inspections-in-depth of Structural Steel Fabrication and the inspection control exercised by consulting firms on the following projects:

I-405-8(17)303, Fremont Bridge Superstructure
I-405-8(20)303, West Fremont Interchange
I-80N-6(42)256, La Grande Section

We received your comments on each project report submitted and find your replies satisfactory.

Our overall impression of the consultant fabrication inspection was quite good. We feel that your controls and the resultant work has improved since we last inspected this work several years ago.

The purpose of this summary report is to bring to your attention two problems which we found to occur on a Statewide basis:

NOTED
A. E. JOHNSON

1. The first concerns the general quality of work. Your inspection consultants are doing a satisfactory job but without exception several minor items have needed correction. These are items like rod drying, welding without proper cleaning, poor weld profiles, etc. To reduce these small problems it is suggested that you consider a policy of sending one of your expert welding people to each out-of-State fabrication site early in the project life to point out areas of concern and to evaluate the inspection consultants effectiveness.

NOTED
TOM EDWARDS

2. The second area of concern is communication between all of the parties involved in a job. At best this is a problem, but it gets worse when a design consultant is involved. Somebody in the State must act as a clearinghouse to be sure everyone is informed of all changes and decisions that affect the work.

copie to Merchant + Jenkins 1-7-71

RECEIVED
DEC 10 1970
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

DEPARTMENT
DEC 10 1970

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

FOR

Memorandum

I-405-8(17)303

TO : Mr. R. L. Porter, State Highway Engineer
Salem, Oregon
7276

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

DATE: December 7, 1970

In reply refer to: 08-35-DA

SUBJECT: Oregon Projects I-405-8(17)303, I-405-8(20)303 & I-405-8(22)304
Fremont Bridge, West Fremont Interchange & East Fremont Interchange
Signing Revisions

FHWA Notice TO-1 dated November 13, 1970, subject Official Standards for Street and Highway Traffic Control Devices, requires that special attention be given to all signs on projects under construction where conformance to the requirements of the new Interstate Sign Manual is feasible. In line with this requirement the planned signing for the subject projects has been reviewed in considerable detail. As a result several changes in the signing are considered necessary in order to fully comply with the requirements of the Interstate Sign Manual. The following list includes both necessary and suggested revisions in the signing for these projects:

1. All signs should adhere to the prescribed horizontal and vertical sequences for route markers, cardinal directions, destination names, arrows and other components of the sign display i. e. all route shields and cardinal directions should appear above the destinations.

2. Signs 16 and 35 on the East Fremont project and Sign 1 on the Fremont Bridge project incorrectly combine an I-5 South route shield with "The Dalles" as a destination.

3. The destinations on Signs 8, 13, and 17 (West Fremont) should be reversed in order to effect proper lane assignments.

4. The Interstate sign manual indicates that it is desirable to limit destinations to one per sign, or to a total of three in a display where two or more signs are placed on the same support. It is recommended therefore that Signs 11, 12, 16, and 18 on the West Fremont project and Signs 13, 15, and 10 on the East Fremont project include only one destination. The proper route shields should be added to Sign 18 on the West Fremont and Sign 10 on the East Fremont.

5. The use of Vancouver as a destination is questioned since it does not appear as a destination anywhere else in the Metropolitan area.

NOTEL
F. B. MARINE

(more) orig to Crandall, pl discuss 12-9-70

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

In addition to the above it is suggested that a detailed review be made of all signing on these projects to make certain that all elements such as interchange numbering, use of down arrows, and "Next Right" legends, and lettering, marker, and numeral sizes are in full conformance with the requirements of the 1970 Interstate Sign Manual.

RECEIVED
DEC 9 1970
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
NOV 30 1970
FOR FILING

OREGON STATE HIGHWAY DIVISION
INTER-DEPARTMENT CORRESPONDENCE

I-405-8(11)303
7276

Salem, Oregon
November 23, 1970

NOTED
A. E. JOHNSON

SUBJECT: Painting
Fremont Bridge Superstructure
Stadium Freeway
Contract ~~7259~~ 7276

To: Memo to the Files

On Thursday, November 19, 1970, at 10 a.m. a meeting was convened in the office of A. E. Johnson, Assistant State Highway Engineer, to discuss a problem with the paint system being used on the Fremont Bridge. Those in attendance and their affiliation is given on a following page.

The problem being experienced on the Fremont Bridge is similar to that being encountered on the East and West Fremont Interchanges.

Mr. Choate opened the discussion with a statement of the contractor's position relative to the problem with the paint system. He stated that the paint had been applied to sections at Swan Island. Recommended procedures had been followed. The work has been inspected by Mr. Cunningham and Mr. Hardt and found unacceptable. Mr. Choate said that the bubbles and pinholes in the vinyl top coat are expected by the paint industry. He stated that the problem with the paint system is delaying the project and needs a solution.

Mr. Klaas described two different experiences with the paint system at the Richmond, California yard:

1. Vinyl applied on a clear day at 70° and light breeze, bubbles developed.

2. Vinyl applied early in the day with overcast and 50°, no bubbles.

He stated that the paint products of Enjay and Mobil do not handle the same. Mobil's product works better in a two-coat system than Enjay's.

Mr. Johnson stated the State's basic position. The State was advised that the paint system specified was the best system available.

The project specifications tell what the State wants. The State now expects the contractor to advise on how they intend to comply.

Mr. Choate stated they bid as per the specifications, they have used experienced people, the best industry procedures and have run tests. The results are not acceptable to the State.

BP°82478-734

Mr. Miller explained that the zinc primer is a porous product. With a quick-dry top coat the gas cannot escape before drying.

Mr. Koperek indicated that the problems being experienced are to be expected with this paint system. The problem can be reduced by using a two-coat system (1-2 mil primer and top coat).

Mr. Miller stated that the paint industry considered some bubbling as acceptable in this type of paint system. He indicated that generally there will be a film of vinyl under the bubbles.

Mr. Johnson questioned the one-coat terms in the specifications under scope of work. Elasewhere in the specification it states that a tie coat may be used as required to get the specified results. He asked the contractor for their proposal to solve the problem with the paint system.

Mr. Choate indicated that on California projects a multiple coat system is used. With this system pinholes were not objectionable.

Mr. Klaas stated that a mist coat-top coat system is a two-coat system since there is a wait for the mist coat to dry.

Mr. Dias stated that the vinyl top coat has been applied under the specifications. He said that claims of what vinyl will do have been oversold.

Mr. Johnson said that the requirements of the specification have not been met.

Mr. Miller stated that the specification writers should have knowledge to understand vinyl performance.

Mr. Johnson stated that the State was not getting the paint job specified. The State wants a proposal, including costs, which will solve the problem.

Mr. Choate asked what the specific problem was, pinholes, bubbling, cratering, what?

Mr. Cunningham and Mr. Hardt said there was some pinholing but most of the problem was with bubbling.

Mr. Klaas said that what is called bubbling may in some cases be foaming.

Mr. Koperek said that there is a considerable difference between pinholes and bubbles. They are caused by different conditions. He said he had observed only bubbles in the work at Swan Island.

Mr. Miller stated that a good job can be had under the present specification. To eliminate bubbles will require a change to multiple coats.

Mr. Choate stated that as the contractor they have met the specifications. Time is critical. Two weeks have been lost to date over the problem with the paint system.

Mr. Johnson indicated that the State has a specification and knows what is wanted. A letter will be given the contractor setting forth these items.

Mr. Choate said that any proposal should be tested in Portland.

Mr. Klaas said that it should be proven first in the Bay Area.

It was indicated that Murphy Pacific was painting the interior of box sections in California. The problem with the painting is holding up shipment of units to Portland.

Mr. Klaas said that some bubbling should be expected and accepted in high build-up areas such as bolt heads.

It was agreed that Mr. Johnson, Mr. Merchant, and a representative of the Federal Highway Administration would meet with representatives of the contractor at Swan Island on Friday, November 20, to view units which have been painted with the vinyl.

There being no further discussion, the meeting was adjourned.

Walter J. Hart
Bridge Administration Engineer

WJH:dh
cc - see following page

cc A. E. Johnson
Ivan D. Merchant
W. M. Hart
Edward L. Hardt
Robert Cunningham
Dean Mandrell

Persons in attendance:

Dean Mandrell, Oregon State Highway Division
Bill Choate, Murphy Pacific Corporation
Ed Hardt, Oregon State Highway Division
A. E. Johnson, Oregon State Highway Division
R. M. Miller, Mobil
Ivan Merchant, Oregon State Highway Division
Frank A. Klaas, Klaas Bros. Inc.
Robert R. Koperek, Mobil Chemical
Anthony Dias, Murphy Pacific
Walt Hart, Oregon State Highway Division
Bob Cunningham, Oregon State Highway Division

RECEIVED
NOV 23 1970
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
NOV 30 1970
FOR FILING

OREGON STATE HIGHWAY DEPARTMENT

METROPOLITAN SECTION
5821 N. E. Glisan Portland, Oregon 97213 Phone 229-6971

November 23, 1970

I-405-8(17)303
7276

MURPHY-PACIFIC ENTERPRISES
P. O. Box 23007
Oakland, California 94623

Re: Fremont Bridge Superstructure
Contract No. 7276

Gentlemen:

Vinyl paint recently applied as part of your work on Contract No. 7276 is not satisfactory and is not acceptable due to imperfections in the surface.

Since our specifications for the project require you to provide a paint system which is compatible within itself and one whose vinyl coat is fully resistent to the elements, we are looking to you for a proposal which will accomplish the required results.

Very truly yours,

Robert L. Schroeder
Metropolitan Engineer

By:

NOTED
A. E. JOHNSON

ORIGINAL SIGNED BY EDWARD L. HARDT

Edward L. Hardt
Assistant Metropolitan Engineer

ELHrpb

bcc: A. E. Johnson
Ivan Merchant
John Jenkins
Robert Shotwell

STATE COPY

NOV 27 1970

FORM PR-330 (REV. 3-68)

cc: [illegible] (A.E. Johnson)
Region (3 cys)
Wash DC
Admin Mgr
File 433

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

STATEWIDE INSPECTION-IN-DEPTH REPORT

(PPM 20-6.1)

11-23-70

I - (Check appropriate box) ( ) ORIGINAL INSPECTION REPORT (X) FOLLOWUP REPORT

REGION	DIVISION	COUNTY	PROJECT NUMBER
7	16 8 Oregon	Multnomah	I-405-8(17)303

DATE OF INSPECTION	PHASE(S) INSPECTED	REPORT OR CONTROL NUMBER
9-28-70	Structural Steel Fabrication	35-70-RID(4)15

INSPECTION MADE BY	IN COMPANY WITH
P.R. Lucherath, Br Engr, FHWA	W.H. Jefferies, P.T.L. Chicago, Ill. H.H. Dynum, Supt. Quality Control, ABC, Gary Ind.

REPORT PREPARED BY	CONTRACT AMOUNT
P. R. Lucherath, Br Engr, FHWA	21,833,293

CONTRACTOR (Name and address)	TIME ELAPSED %	PROGRESS OF WORK
Murphy Pacific Enterprises Oakland, California	WORK COMPLETED %	QUALITY OF WORK

LOCATION

American Bridge Co. plant, Gary, Indiana

NOTE [illegible] A.E. Jo[illegible]

REPORT TO INCLUDE: (1) SCOPE OF INSPECTION (2) SUMMARY OF FINDINGS, RECOMMENDATIONS, AND ACTIONS TAKEN

FREMONT BRIDGE SUPERSTRUCTURE
FREMONT BRIDGE SECTION
Stadium Freeway

On the original inspection it was noted that a substantial portion of the lower deck members fabricated by American Bridge Co. at Gary, Indiana, did not appear to meet the quality of workmanship required by the contract. Murphy-Pacific and Pittsburg Testing Laboratories were aware of this problem prior to the original inspection. At the time of the original inspection steps were being taken to eliminate the problem. The Chicago office of PTL made changes in inspection personnel and in inspection procedures at the ABC plant in Gary. ABC in Gary made changes in their quality control department and in their fabrication procedures. From a visual inspection of the bridge members now being fabricated in the ABC shop in Gary, it appears that all work being accepted by the PTL inspectors will meet contract requirements for quality of workmanship.

All other findings from the original inspection report have been satisfactorily resolved.

No additional followup reports will be required for this inspection.

Copy to Merchant 11-27

[illegible] TOM EDWARDS

RECEIVED
NOV 2[illegible] 1970
OFFICE OF
STATE [illegible]AY ENGINEER

PREVIOUS EDITIONS MAY BE USED UNTIL SUPPLY IS EXHAUSTED

RECEIVED
NOV 30 1970
FOR FILING

FORM S-30 (REV. 10-69)

I-405-8(17)303
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon
November 20, 1970

NOTED
A. E. JOHNSON

To: Memo to the File

SUBJECT: Fremont Superstructure,
Contract 7276
East Fremont Interchange,
Contracts 7310 and 7311
West Fremont Interchange,
Contract 7214
Vinyl Paint

On November 20 a field inspection of structural steel painted with inorganic zinc primer and vinyl topcoat was made at Swan Island and the West Fremont Interchange by Messrs. Johnson, Merchant, Schell, Hardt, Cunningham, Howard and various representatives of the paint suppliers—Enjay and Mobil—and the painting subs—Klaas and Kreiter. The purpose of this inspection was to observe the "bubbling" and "cratering" which has plagued the vinyl paint application to date.

On Swan Island where Klaas is using Mobil paint on the superstructure steel, the group observed a panel of steel which had had 16 wet mils - 5 dry mils of vinyl applied which had numerous bubbles. There were also panels with lessening amounts of vinyl applied as a "primer" coat over which an additional coat of vinyl was applied during the group's presence. The most promising combination was one which had 6 wet mils - 1+ dry mils which was reasonably free of bubbles, over which was applied 10 wet mils - 4 dry mils which had a few bubbles. This panel was still not acceptable from the point of view of bubbling but indicates that with the proper combination of coats considerable improvement in this problem can be made.

At the West Fremont Interchange where Kreiter is using Enjay paint Don Bozeman, representing Enjay, showed the group a number of test panels on which various combinations of vinyl paint formulations and coats were tried. The attached sheets are Bozeman's notes of these tests. The most promising was "Second Bay, Panel 3L" where the standard formulation thinned with one half pint per gallon of MEK was applied in one coat.

It was agreed by all that this panel represents an acceptable vinyl coating and would be used as an inspection standard for future work. It was also agreed that both contractors using Enjay paint would be

allowed to proceed with this modified formula on an experimental basis to determine if an acceptable production paint job could be obtained.

R. L. Schroeder
Metropolitan Engineer

by

Edward L. Hardt

Edward L. Hardt
Assistant Metropolitan Engineer

ELH:lh
Enc
cc: A.E. Johnson, w/Attach.
Ivan Merchant "
John Jenkins "
R.O. Cunningham "
John Howard "
Bob Shotwell "

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NOV 24 1970
OFFICE OF
STATE HIGHWAY ENGINEER

Oct. 31, 1970 Paint Test
West Fremont Interchange

Conditions: Air Temp. = 54°F
Rel. Humid. = 53%
Surface Temp., left side web = 64°F
right side web = 73°F

1st Bay — Not available

2nd Bay, Panels 1R, 2R, 3R, 2L
product: New formulation, no thinning
2 coats, 5 minute interval
Result: Excellent (An occasional bubble located where vinyl is 8+ dry mils)

2nd Bay, Panel 3L
product: OSHD Formulation with 1/2 pt./gallon MEK
1 coat
Result: Acceptable (few tiny bubbles plus some 3/16" ± ϕ.)

3rd Bay, Panels 1L, Top of 3L, and Diaphram
product: New formulation with 1 pt./gallon Isophorone
2 coats, 2 minute interval
Result: Acceptable (some foam, or small bubbles)

3rd Bay — Panel 3R, Bottom of 3L
product: New formulation with 1 pt./gallon Isophorone
1 coat
Result: Acceptable (we probable could have better results with only 1/2 pt./gal. thinner)

4th Bay — Panel 1L
product: New formulation, no thinning
2 coat, 1½ min. interval
Result: Acceptable (small bubbles)

4th Bay, Panels 1R, 2R
product: New formulation, no thinning
1 coat
Result: ???

4th Bay, Panel 2L
product: New formulation, no thinning
1 coat
Result: Acceptable (some small bubbles)

NOTED
R. L. FORTER

DEPARTMENT OF JUSTICE

Memorandum

TO: THE FILE

DATE: November 6, 1970

FROM: G. E. Rohde

SUBJECT: Fremont Bridge, Contract #7276
Murphy-Pacific Enterprises, contractor
United States Steel Company, supplier

A telephone call was received about 10:00 am this date from Mr. William Crow, of King, Miller, Anderson, Nash & Yerke, attorneys for United States Steel Company, relative to the above contract.

It seems that United States Steel is complaining that although a large part of the steel which it was engaged to supply for the above project has been delivered to the contractor without reimbursement even though the contractor has received an allowance for advances on such materials furnished in at least two partial payments.

According to Mr. Crow the allowance in the first partial payment was some $857,000 and the second was that much, or more. He says the contractor has refused to inform United States Steel of the amount of the allowance in the second partial payment. (I have since learned the partial payments may total some $2,142,000 to date)

Mr. Crow states that the contractor has refused to make reimbursement for the material delivered and United States Steel is concerned in that perhaps 90% of the steel for the project is now delivered. He intimated that the contractor may be in financial straights and said the sureties have been notified.

He inquired as to whether the Commission would withhold partial payment pursuant to Art. 109.13 if a claim were made against it and the same was not satisfied. I informed him I could not answer the question. I further informed Mr. Crow that I was certain no action would be taken pursuant to this telephone call, other than that I would pass the information on to the Engineer's office. I suggested that he should proceed formally as to any claims they might have. He indicated that he anticipated a formal notice of claim would probably be presented early next week.

NOTED
TOM EDWARDS

Mr. Crow's telephone number is 224-5858, Portland.

GER:hg

cc - Tom Edwards
L. I. Lindas
F. C. McKinney
Floyd Query

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NOV 9 1970
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
OCT 29 1970
FOR FILING

Mr Porter

OREGON STATE HIGHWAY COMMISSION

I-405-5(17)-43
7276

OFFICE OF GLENN L. JACKSON • % Pacific Power and Light Co. • Medford, Oregon • 97501

TOM McCALL
GOVERNOR

COMMISSIONERS

GLENN L. JACKSON, Chairman
Medford

FRED W. HILL, Member
Pendleton

THADDEUS B. BRUNO, Member
Portland

October 28, 1970

Mr. Prescott "Pete" Lustig
Chairman, Zoomsi Auction 1970
Oregon Museum of Science & Industry
4015 S. W. Canyon Road
Portland, Oregon 97221

Dear Pete:

This is in answer to your letter of October 12. Mr. Porter tells me he has discussed this matter with you over the telephone and that you have decided to delay the action until next year's auction.

Sincerely yours,

Glenn L. Jackson
Chairman

NOTED
R. L. PORTER

GLJ:cjk

RECEIVED
OCT 29 1970
OFFICE OF
STATE HIGHWAY ENGINEER

OREGON STATE HIGHWAY DIVISION

RECEIVED
OCT 26 1970
OFFICE OF
Glenn L. Jackson

HIGHWAY BUILDING • SALEM, OREGON • 97310

October 23, 1970

Mr. Glenn L. Jackson, Chairman
Oregon State Highway Commission
c/o Pacific Power and Light Company
216 West Main Street
Medford, Oregon 97501

Dear Mr. Jackson:

"Pete" Lustig talked to me on the telephone relative to this idea. I told him that I thought it might be complicated to administer because in things of this kind, governmental officials, politicians, and others who might be involved in opening ceremonies could pre-empt a ticket holder and if a person had paid a big price for this privilege, he would become somewhat "put out".

I told Mr. Lustig that insomuch as the bridge would not be completed and ready for traffic before the spring of 1972, there would be a long time lapse between this year's auction and the opening. He deferred the matter for the time being by saying that he would pass the information on to the chairman of next year's Zoomsi auction.

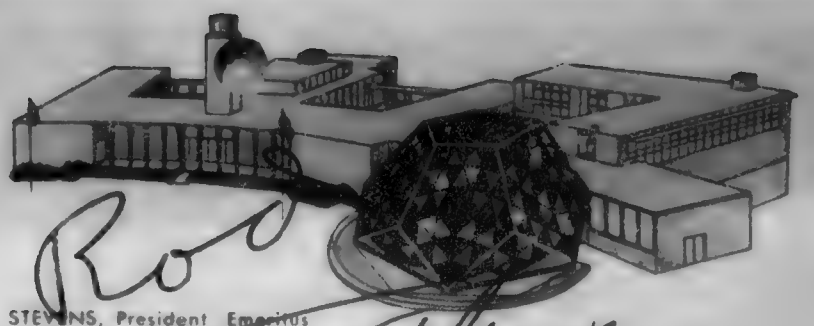
Very truly yours,

R. L. Porter
State Highway Engineer

RLP:fn

omsi

OREGON MUSEUM OF SCIENCE & INDUSTRY
4015 S.W. Canyon Road Portland, Oregon 97221
226-4518



J.C. STEVENS, President Emeritus

October 12, 1970

RECEIVED
OCT 21 1970
OFFICE OF
Glenn L. Jackson

Mr. Glenn L. Jackson
Chairman, Oregon State Highway Commission
State Highway Building
Salem, Oregon 97310

Dear Mr. Jackson:

As we move towards our Zoomsi Auction, 1970 version, we always are looking for unusual items, but yet items that would not cause an economic hardship on a donor. Our Zoomsi Auction committee wonders if it would be possible for the State Highway Commission to reserve the right to be the first vehicle across the Fremont Bridge. This right would be auctioned off Friday night, November 5th, at the Auction. I am sure some bidder would pay a fantastic price, and the proceeds would go to two of the State's finest educational and recreational institutions -- the Oregon Museum of Science and Industry and the Portland Zoo.

Sincerely yours,

Prescott "Pete" Kastig
Chairman, Zoomsi Auction 1970

PL:cr

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OCT 23 1970
OFFICE OF
STATE HIGHWAY ENGINEER

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OCT 28 1970
FOR FILING

I-405-8(17)303
7276

October 27, 1970

Mr. R. E. Simpson, Division Engineer
Federal Highway Administration
Post Office Box 500
Salem, Oregon 97308

Dear Sir:

Re: FAP I-405-8(17)303
Fremont Bridge Superstructure
Contract No. 7276

Reference is made to your inspection-in-depth report of fabrication work in the San Francisco area dated July 20-24, 1970.

The only item of the report requiring corrective action on our part is that of our consultant performing radiographic services for the prime contractor.

This has been discussed with our consultant, and he has agreed to forego any further work for the prime contractor.

Very truly yours,

R. L. Porter
State Highway Engineer

By

NOTED
A. E. JOHNSON

A. E. Johnson
Assistant State Highway Engineer

cc R. L. Porter
Tom Edwards
I. B.Merchant

CAB:sg ms

FORM PR-33D (REV. 3-68)

OSHD
Region Wash DC
(W.Bryant), Area Engr
JB.Kiely, Br Const Engr

Ed Rief, Dist Insp Engr

439
Backlog

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

STATEWIDE INSPECTION-IN-DEPTH REPORT

(PPM 20-6.1)

(Check appropriate box) ☒ ORIGINAL INSPECTION REPORT ☐ FOLLOWUP REPORT

REGION	DIVISION	COUNTY	PROJECT NUMBER
8	Oregon	Multnomah	I-405-3(17)303

DATE OF INSPECTION	PHASE(S) INSPECTED	REPORT OR CONTROL NUMBER
7-20 24-70	Structural Steel Fabrication	35-70-EID-(4)-15

INSPECTION MADE BY
P. R. Luckeroth, Br Engr, BPR
J. B. Kiely, Br Const Engr, BPR
Ed Rief, Dist Insp Engr, OSHD

IN COMPANY WITH
W.O. Nystrom, Lead Inspector
Pittsburgh Testing Laboratory
Representatives of Murphy Pacific Corp. and American Bridge Co.

REPORT PREPARED BY
P. R. Luckeroth, Bridge Engineer, BPR

CONTRACT AMOUNT
$ 21,833,293

CONTRACTOR (Name and address)
Murphy Pacific Enterprises
Oakland, California

TIME ELAPSED	PROGRESS OF WORK
42	Satisfactory
WORK COMPLETED	**QUALITY OF WORK**
No work at site	Satisfactory

LOCATION
Murphy Pacific Corp. plants at Emeryville and Richmond, California
American Bridge Division of U. S. Steel Co. at S. San Francisco, California

REPORT TO INCLUDE: (1) SCOPE OF INSPECTION (2) SUMMARY OF FINDINGS, RECOMMENDATIONS, AND ACTIONS TAKEN

FREMONT BRIDGE SECTION
STADIUM FREEWAY SUPERSTRUCTURE

INTRODUCTION:

The structure is a three span tied arch with spans of 448'- 1255'- 448' and an overall length of 2159'.

This inspection is one of a series of Statewide EID structural steel fabrication inspections. The shop inspection is being handled by Pittsburgh Testing Laboratory under a consultant agreement with Oregon State Highway Division. The contractor, Murphy Pacific Enterprises, has allocated the fabrication as follows: orthotropic upper deck and parapet at upper deck to American Bridge Division of US. Steel Co. at South San Francisco; lower deck, box columns, bottom laterals and wind chord to American Bridge at Gary, Indiana; arch rib and arch lateral system to Murphy Pacific at Emeryville, California; tie girder and expansion devices to Murphy Pacific at Richmond, California; the shop drawings were made by American Bridge offices in Maywood, Birmingham, and Gary.

The orthotropic deck sections are being painted by American Bridge Co., a subcontractor of Murphy Pacific, at the plant in South San Francisco and shipped to Richmond. All other members are painted at Richmond. Shop assembly will be done at the Murphy Pacific plant in Richmond, California.

(more)

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OCT 23 1970
BRIDGE DIVISION

Copy to PTL 10/23/70

PREVIOUS EDITIONS MAY BE USED UNTIL SUPPLY IS EXHAUSTED

The structural steel cost comprises 90 percent of the total contract. Type and quality of the various steels is A36 - 7323 tons, A441 - 1039 tons, A514 - 3208 tons and A588 - 7155 tons.

SCOPE OF INSPECTION:

The inspection covered a complete review of the work being performed by Pittsburgh Testing Laboratory in the San Francisco Bay Area. Included were an inspection of all records of the work, interviews with the lead inspector and the inspectors assigned to each shop and an inspection of the work being performed at each of the three shops in the Bay area.

Overall the inspection work being performed by Pittsburgh Testing Laboratory in this area is considered to be very good. The materials records, material controls and production records are complete, accurate and up to date. The inspections staff is well qualified to do the work, and all seem eager to do a good and thorough job of inspection.

The inspection team felt that the plants inspected were producing an acceptable product, generally showing very good workmanship and quality control.

SUMMARY OF FINDINGS, RECOMMENDATIONS AND ACTION TAKEN:

Review of Inspection Agency:

Overall the inspection agency is doing a good job at the plants inspected in fulfilling the terms of its agreement with the State.

Inspection of the lower deck system members received from the American Bridge Co. plant in Gary indicated that many of the units would require additional inspection and repair before they could be accepted. Many areas were marked with yellow marking chalk indicating undercut, spatter, laminations, and defects in plates. One bottom flange transition weld was not ground smooth (only three welds were checked). On WF stringers many of the holes were not deburred, all flame cut edges were not ground, and the machined surfaces of the pinholes were uncoated and rusty. Some of the repair welds appeared to be inferior to the original weld. All of this material was inspected by Pittsburgh Testing Laboratory at the Gary plant prior to shipment.

Recommendations: On a substantial portion of the material produced by American Bridge Co. at Gary and viewed at Richmond, it appears that the quality of workmanship will not meet contract requirements. It is recommended that Pittsburgh Testing Laboratory review their inspection service at Gary and make sure that all units are acceptable before shipment. Corrective work on any future shipment should be done prior to sand blasting and painting.

(more)

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BRIDGE DIVISION

Inspection Records:

All certified mill test reports are checked for compliance with specifications. Heat numbers are maintained through fabrication and the heat numbers for each piece of plate in a fabricated unit is recorded in the inspector's diary.

Recommendations: None.

Shop Plans:

A complete set of approved shop drawings are on file at the Pittsburgh Testing Laboratory office. The lead inspector is responsible for seeing that all revisions are made on the drawings at the various plants. Some shop drawings did not show approval or date.

Recommendations: Lead inspector should date and initial inspector's shop plans and note revisions if any as means of keeping track of revisions. The shop inspector's set of shop plans should carry a statement on the first sheet that these prints conform with approved set in Pittsburgh Testing Laboratory office.

Radiographs:

Murphy Pacific has employed Pittsburgh Testing Laboratory to do radiography required by the contract. American Bridge has its own radiographic facilities. All areas to be radiographed are marked by Pittsburgh Testing Laboratory inspectors who also interpret the films. All radiographic film is on file at Pittsburgh Testing Laboratory office in Emeryville.

Recommendation: In keeping with inspection requirements, radiographs from each completed unit should be sent to the State Highway Division bridge engineer as soon as the unit is accepted.

Pittsburgh Testing Laboratory is employed by the seller, Murphy Pacific, to take required radiographs at the Emeryville and Richmond plants and is employed by the buyer, Oregon State Highway Division, to witness and interpret the results.

Recommendation: Such an arrangement does not fill the need for an independent State representative in the shop, and it is recommended that a third party be employed to take the radiographs.

(more)

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OCT 23 1970
BRIDGE DIVISION

Materials Control:

All materials except paint are accepted by certification from the manufacturer. Pittsburgh Testing Laboratory's files contained certification for the steel, electrodes, flux and H.S. bolts being used for the bridge. The Pittsburgh Testing Laboratory paint inspector is sending in samples of each of the two components used for the inorganic zinc primer on a once-a-week basis. The paint manufacturer is not properly marking the containers nor is he shipping lots in accordance with contract special provisions.

Recommendation: Paint supplier should be informed of packaging and marking requirements under Section 414 of the special provisions. Proper packaging and marking will aid Pittsburgh Testing Laboratory to comply with sampling requirements of Section 414.

Inspection Services:

All of the welding inspectors have a good background of experience in welding, welding procedures and shop practice. They appear to have a good relationship with the shop personnel and the cooperation of the shop supervisors. Some of the inspectors were not always clear on the points of difference between Oregon State Highway Division standard specifications and special provisions, and AWS standards.

Recommendations: Continued study of applicable contract specifications to insure that work is being performed in accordance with contract requirements.

During a shop inspection of fabricated lower deck members, it was noted that the stud shear connectors had not been attached. The plant manager explained that because of the safety hazard caused by the studs during erection, they would not be attached until erection was complete and the deck forms were in place.

Recommendation: In the interest of eliminating a hazardous condition it is recommended that this practice be followed whenever possible.

Inspection of paint work indicated some differences on point of acceptance of painted surfaces for proper paint thickness. It was also noted that some cope holes were not painted. These items were discussed with the lead inspector and corrections will be made. From discussion with lead inspector, satisfactory corrections will be taken care of before the units leave the area, or inspection reports will indicate units requiring repairs to be made in Portland.

Recommendation: None.

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OCT 23 1970
BRIDGE DIVISION

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OCT 21 1970
FOR FILING

SP 82503-734

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon
October 16, 1970

I-405-8(17)303
7276

To: Mr. Ivan Merchant
Bridge Engineer
Salem

SUBJECT: Fremont Bridge
Contract 7276
Bearing Assemblies at
Piers 1W & 1E

With regard to the securing of the lower castings to the bearing plates cast into Piers 1W and 1E of the Fremont Bridge, two questions have arisen which should be answered before we can proceed. They are:

(1) Procedure for installing struts.

By letter dated September 30, Parsons, Brinckerhoff, Quade & Douglas furnished us with a plan for strutting the lower castings which would be used in conjunction with tensioned 3½" high-strength bolts to secure the castings. A time-sequence procedure should be worked out for installation of these struts in conjunction with the contractor's erection scheme since, at the time of installation, the space needed for the struts will be occupied by the contractor's jacks. The basic question which needs to be answered is, can one or more jacks be safely removed with the 3½" bolts installed before the struts are installed?

With regard to the 3½" bolts, we learned by phone conversation with Mr. Silano that he was not aware that all the base plate holes would be misaligned from the casting holes about 3/4" due to the adjustment due to span length difference. He apparently thought that many of the bolts would be in direct bearing. If this is critical to the strut design, this point should be clarified. Incidentally, Mr. Silano is reluctant to do any more work on this question until he has authorization for performance of extra work on his contract.

(2) Adequacy of guide rail bolts.

Our current plan for treating the guide rails is to have Kiewit disassemble same and locate each rail on its proper base plate. This would relieve Kiewit of any further responsibility. After the castings are in place the rails would be placed snug against them, the holes (which would be offset in some cases due to the skewed base plates) reamed and the rails bolted down. However,

NOTED
A. E. JOHNSON

this will then be the third time these bolts will have been torqued. Page 9 of Bethlehem Steel's book "High-Strength Bolting for Structural Joints" states that A325 bolts "can be re-used once or twice." Mr. Silano tells us the design of these bolts is critical and therefore it is requested that the adequacy of these bolts be checked, particularly for the condition when the center span is complete and before the 3½" bolts are installed.

If it is determined that new guide rail bolts are required due to the "used" condition of the existing bolts, it is conceivable that we could expect Kiewit to furnish new bolts since they are responsible for the "used" condition. For this reason we have not yet approached Kiewit regarding completion of their obligations. If the design of these bolts (new or used) is critical, particularly since the holes will, in some cases, not be round, it is recommended that we discard the 1" bolts and go to larger sized bolts.

Mr. Cunningham and I will be happy to discuss any of the above questions at your convenience.

R. L. Schroeder
Metropolitan Engineer

by

ORIGINAL SIGNED BY EDWARD L. HARDT

Edward L. Hardt
Assistant Metropolitan Engineer

ELH:lh
cc: A. E. Johnson
Robert Cunningham
Robert Shotwell

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OCT 19 1970
OFFICE OF
STATE HIGHWAY ENGINEER

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NOV 24 1970
FOR FILING

I-405.8(17)303
7276

Salem, Oregon
October 6, 1970

Agenda Item 4y
September 30 Commission meeting

RAILROAD COMPANIES
FILE No. 603
MISC. CONTRACTS and
AGREEMENTS No.

Mr. F. D. Morgan
Construction Engineer

Attention: T. W. Litchfield
Railroad and Utility Engineer

Attached for further handling are two copies of an extension rider to a November 26, 1962, agreement with Union Pacific Railroad Company extending the expiration date of the existing license to make surveys on Railroad property for the Fremont Bridge from November 25, 1970, to November 25, 1972.

Please have the Railroad Company sign this agreement rider. We have retained a xerox copy until a fully executed copy is returned for the Commission's files.

Floyd Query, Secretary

fkn
Att.

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

TO : Mr. R. L. Porter, State Highway Engineer
Salem, Oregon

DATE: September 8, 1970

In reply refer to: 08-35.6

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

Informal
Pls. Handle

SUBJECT: Oregon Project I-405-8(17)303
Steel Fabrication at Gary, Indiana

Mr. P. R. Luckeroth from this office will be in Chicago on September 28 and 29 en route from a Lincoln Electric welding seminar at Cleveland.

I would appreciate it if you could arrange with Pittsburgh Testing Laboratory to have someone from the Chicago Pittsburgh Testing Laboratory office accompany him on a tour of the American Bridge Co. plant at Gary, Indiana, on one or both of these days.

Mr. Klemm - Chicago Office PTL
Tel. 312 - 449-5050
Home 312 - 965-0320

RECEIVED
SEP 11 19[illegible]
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
JOHN EDWARDS

NOTED
IVAN D. MERCHANT

RECEIVED
SEP 11 19[illegible]
BRIDGE DIVISION

NOTED
A. E. JOHNSON

RECEIVED
SEP 9 19[illegible]
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

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AUG 26 1970
FOR FILING

I-405-9(17)303
7276

507 State Highway Building

August 25, 1970

Mr. L. L. Wallace
Bridge Design Engineer
328 State Highway Building
Salem, Oregon 97310

Re: Lease Agreement
Murphy Pacific Corporation
and Port of Portland
Contract No. 7276

Dear Mr. Wallace:

I have reviewed the lease between Murphy Pacific and the Port of Portland, and find that it is satisfactory and contains the necessary terms to allow the State of Oregon to continue to assemble the bridge at the Swan Island location in the event that Murphy Pacific would default on their contract.

However, I would include one word of caution insofar as paying them for the steel as it is delivered to the Swan Island location. If Murphy Pacific should default without having paid the manufacturer of the steel and was behind in his payments to the fabricator or any other sub-contractor, the steel could be tied up in litigation for a considerable time even though Murphy Pacific has a surety that would continue the contract.

Very truly yours,

LEE JOHNSON
Attorney General

Jack L. Sollis
Assistant Attorney General
Trial Division

JLS:gc
cc: L. I. Lindas

RECEIVED
AUG 24 1970
ENGINEERING
I-405-8(17)205
1276

August 21, 1970

Pittsburgh Testing Laboratory
c/o Cameron Limited
Fremont Project Office
22 East Fifth Avenue
Vancouver 10, B. C.

Attention: Mr. Ken Peterson

Gentlemen:

Re: Steel Fabrication and Erection
Unit 1 EB
Diaphragm Misalignment

During the fabrication at Plant 1 and the shop erection at Plant 2, it became apparent that there was a misalignment of interior floor beam diaphragms. The diaphragms in question are at floor beams 10, 11, 12, and 13 between girder flanges C1 and C2. It is my understanding that during the course of events, this condition was called to the attention of the fabricator with the request that the misalignment be corrected, but that this condition was not corrected and the floor beam moment plates were installed and the floor beams installed and fitted. The State is not happy with this situation inasmuch as Pittsburgh Testing Laboratory is our representative on the shop site, and we believe we are entitled to fabrication corresponding to the approved shop details, good shop practice, and the contract plans and specifications.

In the present instance, it has been determined that the misalignment of the diaphragms is not a serious structural matter, and we are willing to accept the "as fabricated" condition in order that the job may be expedited.

By copy of this letter and through the prime contractor Anderson-Hansen, we are requesting the fabricator, Cameron, to

comply with requests of our inspection agency to the end that the project is fabricated in conformance with the approved shop details, specifications, and good shop practice. It must be pointed out that in a complicated structure such as the one being fabricated, it is necessary that close geometric tolerances be obtained in order that there be no build-up of details or conditions which could be damaging to the in-service integrity of the structure.

Very truly yours,

R. L. Porter
State Highway Engineer

By

A. E. Johnson
Assistant State Highway Engineer

cc: Don Scott
Pittsburgh Testing Laboratory

Anderson-Nichols

Cowan Limited

bc: R. L. Porter
Tom Edwards
V. D. Wolfe
Ivan Merchant

AEJ:IDM:ew sr

STATE COPY 8-11

Form F-209—6M

OREGON STATE HIGHWAY DEPARTMENT

APPROVED EFFECTIVE DATE 6-4-69
Contingent upon modification of project agreement if additional funds are required.
BY [signature]
TITLE Dist Engineer
DATE 8-13-70

I-405-8(17)303
1276

Order for Extra Work

TO BE PERFORMED ON FORCE ACCOUNT BASIS

U. S. BUREAU OF PUBLIC ROADS

Project Name Fremont Bridge Superstructure
Highway Stadium Freeway
County Multnomah
Contractor Murphy Pacific Enterprises
Address P.O. Box 23007, Oakland, California 94623

Date
Contract No. 1276
Prefix 626-1013
F. A. Project No. I-405-8(17)303
Order No. 1

The following work is hereby classified as "Extra Work", to be performed and paid for in accordance with the terms of contract.

Description of work to be done: Flagging Labor, to be done in accord with the Standard Specifications, Special Provisions and Supplemental Standard Specifications for the subject project. In the instance where flagging is required for a relatively short interval and there are no laborers readily available, higher skilled labor may be utilized for flagging. This will be done in the event that this produces the least expensive flagging operation.

Location by station numbers:

Throughout project. Sta. FB^3 346+20.50 to Sta. FB^3 367+79.50.

NOTED
A. E. JOHNSON

Estimate of quantities and cost:

Flagging----------$30,000.00

NOTED
TOM EDWARDS

Explanation: (Explain here the conditions which cause this work to be classed as "extra work")

The $30,000.00 listed above is the total amount authorized for flagging in the construction authorization for the subject project, as being the state's share. No work has been performed to date.

INSTRUCTIONS: A single order should not cover more than one class of work or more than one extra work job.

Submit five copies of the order to Salem. After approval of the order by the assistant state highway engineer, the Salem office will send one copy to the contractor, one to the division engineer and one to the resident engineer.

Project authorization	$24,054,902.
Present estimate of project cost, including $--30,000.-- for work under this order	$23,180,178.
Expected under-run over-run amount	$874,723.
Expected under-run over-run per cent	3.77

Space to right of this line for use of Salem Office

Submitted by [signature] Resident Engineer

Approval Recommended: [signature] Assistant Division Engineer

Approval Recommended: [signature] Construction Bridge Engineer

Approved [signature] Deputy State Highway Engineer, Assistant State Highway Engineer-Construction or State Highway Engineer.

State Printing

Original to Construction 8/18/70

J.K.

RECEIVED
JUL 7 - 1970

Form FHWA-121 (12-67)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Bureau of Public Roads
Box 300
Salem OR 97308

FOR FILING I-405-8(17)303

7276

TO : Mr. R. L. Porter, State Highway Engineer
Salem, Oregon
Attention: Mr. A. E. Johnson

DATE: July 1, 1970

In reply refer to: 08-35.6

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure
Structural Steel Fabrication Inspection

I appreciate your assigning Mr. Rief to accompany us on our structural steel Inspection-in-Depth series this season.

Mr. Paul Luckeroth will be our representative for the SanFrancisco inspection. It is planned to leave Portland by plane Monday morning, July 20, and return Friday, July 24.

After arriving in SanFrancisco we plan to have two meetings to discuss the details of the inspection. The first meeting will be in our Region office with the State and Bureau people and Mr. John Kiely from Region 7 who will assist us on the inspection. The second meeting will include representatives of the consulting inspection agency.

The remainder of the week will be spent inspecting each of the three plants fabricating steel for this project.

copy to Ed Rief
7-6-70

NOTED
A. E. JOHNSON

NOTED
TOM EDWARDS

RECEIVED
JUL 8 1970
OFFICE OF
STATE HIGHWAY ENGINEER

copy
R.E.J.

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
JUL 1 - 1970
FOR FILING

I-405-8(17)303
7276

June 29, 1970

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
Box 300
Salem, Oregon 97308

Re: Your File 08-35.6
Fremont Bridge Superstructure
Structural Steel Fabrication
Inspection
I-405-8(17)303

Dear Sir:

In response to your letter of June 26, we will assign Mr. Ed Rief to accompany you on the Inspection-in-Depth of steel fabrication in San Francisco, California, Vancouver, B.C., and Pocatello, Idaho, and will advise our contract consultants in order that they may have their representative on the projects.

Please advise us at your earliest convenience of the date selected in order that we may arrange for out-of-State travel for Mr. Rief.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

TE:ja

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant (enc.) - Please notify the consultant and
Ed Rief (enc.) keep him posted.

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Bureau of Public Roads
Box 300
Salem OR 97308

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon
Attention: Mr. O. J. Shaw

DATE: June 26, 1970

In reply refer to: 08-35.6
X I-80N-6(42)256
I-405-8(20)303
I-405-8(22)304

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

Edwards

SUBJECT: Oregon I-405-8(17)303
Fremont Bridge Superstructure
Structural Steel Fabrication Inspection

This summer we plan to conduct a series of inspections-in-depth on structural steel fabrication. The jobs chosen and the locations of the fabricating plants are:

Fremont Bridge Superstructure - San Francisco, California
Fremont Bridge Approaches - Vancouver, B. C.
La Grande Section - Pocatello, Idaho

We would like a representative from your division to accompany our people on these inspections. If possible we would appreciate the services of Mr. Rief.

Our first inspection trip is scheduled for San Francisco the week of July 20. The other two inspections will be scheduled in the near future.

In addition to sending a representative we would also like your division to contact your consulting inspection agency and advise them of our plans so they can also plan to attend.

RECEIVED
OFFICE OF

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
JUN 2 1970
FILING

OREGON STATE HIGHWAY DIVISION

I-405-8(17)363
7276

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

June 12, 1970

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street N. E.
Salem, Oregon 97310

Attention Mr. Herbert A. Schell, Jr.

Dear Mr. Simpson:

Fremont Bridge
Contract 7276
Seal Welding

After our inspection trip to San Francisco on May 14, 15, and 16 and our return to Salem, a telegram was directed to Murphy Pacific directing them to make the seal weld to the orthotropic deck plate at the floor beam web cope. Mr. Edwards directed a letter to you dated June 1 covering this matter.

I have been in contact with our inspection agency who have been making time checks on the amount of time necessary to do this work. They have informed me that one man is easily able to make all of the seal welds in one full deck panel in an eight-hour day. A written report from Pittsburgh Testing Laboratory will be prepared and sent in to this office covering their time study and at that time a price agreement will be offered to Murphy Pacific for the reasonable cost of this work.

NOTED
TOM EDWARDS

Very truly yours,

ORIGINAL SIGNED
IVAN D. MERCHANT
Ivan D. Merchant
Bridge Engineer

IDM:DH

cc Tom Edwards
L. H. Young
V. E. Skoog

RECEIVED
JUN 15 1970
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUN 3 - 1970
FOR FILING

I-405-8(17)303
7276

June 1, 1970

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
Box 300
Salem, Oregon 97308

Re: Fremont Bridge
Contract No. 7276

Dear Sir:

During the course of our inspection of steel fabrication for the Fremont structure, which is being carried on in the South San Francisco yards of the American Bridge Company, it came to our attention that there was a controversy concerning the closing of an opening between the fillet welds on each side of the floor beam web connection to the deck plate and a like controversy where the deck stiffeners extend through the floor beam and are fillet-welded thereto on both sides.

There was possibility and, in fact high probability that an opening between both the deck plates and the floor beam and between the deck stiffeners and the floor beam would exist after painting, with the inevitable result of rust, etc. I ordered the contractor by telegram to close these openings. The subcontractor, American Bridge, indicated that there was no specific problem in closing the ends of the welds between deck plate and the floor beam, but that the closing of the opening between the fillet welds and the floor beam at the stiffener joints could only be made after revolving the deck sections to a point where the welding could be done in the down-hand position.

After my return to Salem, I asked the Legal Division to study the specifications to determine whether or not our

specifications are sufficiently inclusive as to require this work without extra compensation. Their ruling, a copy of which is attached, is to the effect that they are not.

We are asking, therefore, that our inspecting consultant, Pittsburg Testing Laboratories, make such observations and take such notes as are necessary to determine what the actual cost of the required work will be. A Price Agreement will be negotiated to cover this item at such time as it may be possible to determine a fair settlement thereof.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

Attachment
TErja

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant (enc.)
Leonard I. Lindas

LEE JOHNSON
ATTORNEY GENERAL

DIARMUID F. O'SCANNLAIN
DEPUTY ATTORNEY GENERAL

DEPARTMENT OF JUSTICE
507 State Highway Building
SALEM, OREGON 97310
TELEPHONE: (503) 364-2171

TRIAL DIVISION

THOMAS D. O'DELL
CHIEF TRIAL COUNSEL

J. BRADFORD SHILEY
ASSISTANT CHIEF TRIAL COUNSEL

WALLACE CARPENTER
LEONARD I. LINDAS
ASSISTANT ATTORNEYS GENERAL AND COUNSEL

CLIFFORD A. ALLISON — E. DAVID LADD
JAMES A. BLEVINS — JAMES F. LARSON
JAMES P. CRONAN — KEITH R. MALONEY
QUINTIN B. ESTELL — JOHN R. MCCULLOCH
LAWRENCE J. HALL — FRANK C. MCKINNEY
LESLIE B. HAMPTON — EARL M. PRESTON
ROBERT A. HOLLAND — GEORGE E. RONDE
DONALD J. HOWE — JACK L. SOLLIS
CARLOTTA H. SORENSEN
ASSISTANT ATTORNEYS GENERAL

May 29, 1970

Mr. Tom Edwards
Assistant State Highway Engineer
Administration Office

Re: Fremont Bridge
Contract #7276

Dear Mr. Edwards:

You have requested this office to consider a matter of controversy arising out of the fabrication of orthotropic deck sections on the Fremont Bridge. This controversy arises out of a determination on the part of the Highway Division that a fillet weld should be made carrying the weld between the trapezoidal stiffener and the floor beam around and through the cope holes in the webb of the floor beam at its juncture with the deck plate.

Submitted are copies of correspondence between Mr. L. G. Silano, Project Engineer for Parsons, Brinckerhoff, Quade and Douglas, Inc., Consulting Engineers, and Murphy Pacific Enterprises, prime contractor, as well as American Bridge Division, the sub-contractor for the steel fabrication as follows:

L. G. Silano	Parsons, Brinckerhoff, Quade & Douglas	April 17, 1970
Jay P. Murphy	Murphy Pacific Enterprises	April 27, 1970
W. J. Lowe	American Bridge Division	April 24, 1970
Jay P. Murphy	Murphy Pacific Enterprises	April 28, 1970
George E. Boyd	American Bridge Division	April 27, 1970
L. G. Silano	Parsons, Brinckerhoff, Quade & Douglas	May 5, 1970

Examination of Sheet 9 (Drawing 25254) of the Orthotropic Deck Details for the Fremont Bridge shows the typical cross sections of the deck stiffeners and floor beam. By appropriate symbol, a fillet webb is called for on both sides at the juncture of the stiffener and the webb wall of the floor beam. A one-inch cope is required at the juncture of the stiffener and webb wall with the deck plate. In the course of fabricating these sections of the bridge deck, American Bridge has not carried the fillet weld along the stiffener and through the cope in the floor beam to the fillet weld on the opposite side.

Article 410 - 3.22 (403) of the Supplemental Standard Specifications provides that the "fit of joints which are not sealed by welds throughout their length shall be sufficiently close to exclude water after painting".

The Project Engineer for the above mentioned consultants has suggested, and the Highway Division agrees that, without a weld through the cope in the webb of the floor beam, moisture might well condense and accumulate at this location. Such an accumulation would lead to unnecessary maintenance costs in the future even though the joint is constructed in accordance with Article 410 - 3.22 of the Supplemental Standard Specifications mentioned above. Request of American Bridge, the steel fabricator, to supply the "all around weld" through the cope has met with objections on its part that such would involve a specific and separate welding operation in the shop to insure this weld is definitely in place. American Bridge has for this reason declined to perform the requested weld without payment of additional compensation in the amount of $37,500. An explanation of the separate operation required is contained in the letter from American Bridge to Murphy Pacific Enterprises, dated April 24, 1970. It is indicated elsewhere that there would be approximately 14,000 such welds to complete the deck of the bridge.

It is the position of the fabricating sub-contractor that the contract is quite definitive as to the welding to be accomplished and nowhere in the contract documents is the seal welding of the coped holes specified, nor do the welding symbols on the design drawings for welding the floor beam webb comprehend such seal welding.

Examination of the prescribed plans and specifications for this contract to erect a multi-million dollar structure over the Willamette River reveals detailed criteria for its fabrication and erection. Insofar as the particular matters involved in this instance are concerned the details are set forth on drawings numbered 25254 and 23836 and in Article 410 - 3.22 (403).

It is understood from responsible Highway Division Engineers that the fabrication and welding of the orthotropic deck sections in question has been performed in full compliance with the detailed specifications and the Consultant's Project Engineer, Mr. L. G. Silano, agrees in his letter of May 5, 1970 that, "The detailed plans do not emphasize or call for these welds as such", in referring to the seal welds through the coped holes.

It is to be noted that American Welding Society has published a booklet entitled "Standard Welding Symbols" (AWS A2.0) containing symbols for use in indicating types of welding desired. These symbols are in common use, according to information we have received. In fact the "Standard Specifications for Highway Construction, 1964", contains a provision under Section 410 - 3.22 (103) adopting their use, although deleted by the Special Provisions in favor of Drawing No. 23836. Our purpose for mentioning the

AWS symbols is to note that the 1968 edition thereof contains, at page 7, a Weld-All-Around symbol with the explanation that "welds extending completely around a joint shall be indicated by means of the Weld-All-Around symbol thus". Such symbol was not indicated on the drawings for the orthotropic deck section.

Courts have often given consideration to contracts of the kind here involved where the contractor is to perform a given undertaking in accordance with prescribed plans and specifications and where, as here, he is not permitted to vary from such prescribed plans and specifications (See Article 5-2) even if he deems them improper and insufficient. In such type of contract where the contract specifies what he is to do and the manner and method of doing it, and he does the work specified in the manner specified, his engagement is fulfilled and he remains liable only for defects resulting from improper workmanship or other fault on his part, unless there be a provision in the contract imposing some other or further obligation.

Fredrick v. County of Redwood, 153 Minn. 450, 190 N.W. 801
McCree & Co. v. State of Minnesota, 91 N.W. 2d 713 1958
Kansas Turnpike Auth. v. Abramson, U. S. Court of Appeals,
Tenth Circuit, 1960 275 F 2d 711

As noted in the above discussion, the plans and specifications are explicit in what the contractor is to do and the manner and method of doing it. They further prohibit the contractor from deviating from the prescribed plans and specifications. As a consequence it is my opinion that the contractor will have fulfilled his obligation under the contract upon completion of the fillet weld on both sides of the juncture of the stiffener and the webb wall of the floor beam and that an order to deposit a seal weld through the coped holes in the floor beam webbs to insure the closing of what could otherwise become a pocket for condensation of moisture would constitute extra work and governed by Article 4-4 of the Standard Specifications.

Some mention has been made that the deposit of a weld at these locations in order to provide this necessary seal "is in keeping with normal shop practice associated with good workmanship". In reply to this, the fabricator claims that such can only be applied "when the extent of the work has been defined".

The fabricator's reply in essence places reliance upon a well settled rule of law that when a custom or usage is inconsistent with the plain and unambiguous terms of a contract; it cannot be interposed to contradict or qualify its provisions. In such case the terms of the contract; as here, are evidence of the parties' intention to avoid such usage or custom.

Where the contract is specific as in Article 410 - 3.22 (403) of the Supplemental Standard Specifications calling only for the fit of joints not sealed by welds through their length to be sufficiently close to exclude water after painting, and such is complied with in performance, then the request that a seal weld be provided for better assurance on the basis of usage or custom in the trade is in my opinion an attempt to interpose the usage for the purpose of importing new terms into contract.

It is understood that the steel fabricator has been ordered to deposit the fillet weld at the point in controversy. Under the contract, plans and specifications for the Fremont Bridge (Contract #7216) a court of law would, in my opinion, and in accordance with the principles set forth above, find that such is extra work for which payment is to be made in accordance with Article 4-4. No comment is made as to the compensation to be made for such extra work which is a matter between the contractor and engineer in accordance with applicable contract provisions.

Very truly yours,

LEE JOHNSON
Attorney General

L. I. Lindas
Assistant Attorney General
and Counsel to Highway Division

GER:hg

RECEIVED
MAY 29 1970
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAY 19 1970
FOR FILING

I-405-8(17)303
7276

Salem, Oregon
May 18, 1970

Mr. Leonard I. Lindas
Chief Counsel

Attached is a sketch showing a point of controversy on the construction of the orthotropic deck sections on the Fremont Bridge. Fabrication is under way and I have ordered the steel fabricator to do the necessary work to insure the closing of what could otherwise become a pocket for condensation of moisture.

Would you please advise whether or not our specification is sufficient to require this work to be completed without extra compensation. Mr. Al Bear will provide you with the necessary technical consultation in further discussing this problem.

Attachment

Tom Edwards
Assistant State Highway Engineer

TE:ja

cc Forrest Cooper
enc. R. L. Porter
Victor D. Wolfe
Ivan Merchant

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
Salem, Oregon

DECK ℄

STIFFENERS

B

A

PARTIAL VIEW

DETAIL "A"

FLOOR BEAM

AREAS TO BE WELDED

DECK ℄

1/2"

A

80% MIN. PEN.

B

1" R. COPE

STIFFENER

VIEW "A"

5/16

FLOOR BEAM WEB PLATE

5/16

7/16"

STIFFENER

FLOOR BEAM

DETAIL "A"

VIEW "A"

5/16"

FREMONT BRIDGE

RECEIVED
FOR FILING

I-405-S(17)303
7276

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Address reply to:
COMMANDER (oan)
Thirteenth Coast Guard District
618 Second Ave.
Seattle, Wash. 98104

3271
Ser 219
30 March 1970

Mr. Ivan D. Merchant
Bridge Engineer
State of Oregon
Oregon State Highway Department
Salem, Oregon 97310

NOTED
TOM EDWARDS

Dear Mr. Merchant:

Please find enclosed the original of an amendment dated 23 March 1970, to apply to your Fremont Bridge over the Willamette River in Portland, Oregon. This is in accordance with your letter of 27 February 1970, requesting the time extension.

Sincerely,

N. G. NELSON
Lieutenant Commander, USCG
By direction of the District Commander

Encl.(1) Amend. to
bridge permit

RECEIVED
APR 2 1970
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
APR 1 1970
BRIDGE DIVISION

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Address reply to:
COMMANDANT
U.S. COAST GUARD
WASHINGTON, D.C. 20591

AMENDMENT TO BRIDGE PERMIT

28 MAR 1970

WHEREAS by a permit issued on 15 January 1964, as amended 4 November 1965, the Secretary of the Army approved the map of location and plans of a bridge to be constructed by the State of Oregon across the Willamette River at Portland, Oregon, under authority of the General Bridge Act of 1946;

AND WHEREAS condition 3 of said permit, as amended, fixed the time for completing construction of said bridge at 15 January 1970, and the - STATE OF OREGON - now requests that the time for completing the construction of said bridge be extended;

AND WHEREAS the functions, powers and duties of the Secretary of the Army under the General Bridge Act of 1946 were transferred to and vested in the Secretary of Transportation by Section 6(g)(6)(C) of the Department of Transportation Act (80 Stat. 931) and have been delegated by the Secretary to the Commandant, U. S. Coast Guard in Title 49 Code of Federal Regulations, Part 1, and by permit issued on 12 July 1967, the Commandant approved revised plans for the construction of said bridge;

NOW THEREFORE, This is to certify that the time for completing the construction of said bridge is hereby extended. In granting this extension of time limit, all conditions to which the original permit was s ubject are superseded by the following conditions:

1. No deviation from the approved plans shall be made either before or after completion of the structure unless the modification of said plans has previously been submitted to and received the approval of the Commandant.

2. All work shall be so conducted that the free navigation of the waterway is not unreasonably interfered with and the present navigable depths are not impaired. The construction of falsework, pilings or other obstructions, if required, shall be accomplished in accordance with plans submitted to and approved by the Commander, Thirteenth Coast Guard District prior to construction of the bridge. The channel or channels through the structure shall be promptly cleared of all obstructions placed therein or caused by the construction of the bridge to the satisfaction of the District Commander, when in his judgment the construction work has reached a point where such action should be taken, and in any case not later than ninety days after the bridge has been opened to traffic.

28 MAR 1970

AMENDMENT TO BRIDGE PERMIT: State of Oregon bridge across the Willamette River at Portland, Oregon.

3. Issuance of this permit does not relieve the permittee of the obligation or responsibility for compliance with the provisions of any law or regulation as may be under the jurisdiction of any federal, state or local authority having cognizance of any aspect of the location, construction, or maintenance of said bridge.

4. The approval hereby granted shall cease and be null and void unless the actual construction of the bridge be completed by 31 December 1972.

H. D. MUTH
Captain, U. S. Coast Guard
Chief, Aids to Navigation Division

RECEIVED
APR 1 1970
BRIDGE DIVISION

RECEIVED
1967
LING

DEPARTMENT OF THE ARMY
PORTLAND DISTRICT, CORPS OF ENGINEERS
628 PITTOCK BLOCK
PORTLAND, OREGON 97208

NPPND-WM-P
~~1507-21(Willamette R.-Bridge)-13.~~
I-405-8(17) 303
7276

20 July 1967

Oregon State Highway Department
Salem, Oregon 97310

Gentlemen:

Inclosed is an instrument approved 12 July 1967 by the Department of Transportation for revised plans submitted by you for construction of a bridge across Willamette River at Portland, Oregon.

You are cautioned that if any material changes in the location or plans of the structure are found necessary on account of unforeseen or altered conditions or otherwise, revised plans should be submitted promptly to the District Engineer, Portland District, to the end that these revised plans, if found unobjectionable from the standpoint of navigation, may receive the approval required by law before construction is begun.

You are requested to report promptly to the District Engineer, Portland District, the dates of commencement and completion of the work for timely advice of the approving authority and in order that required inspections can be made.

Sincerely yours,

George E. Hyde

GEORGE E. HYDE
Chief, Navigation Division

Incl
Instrument

NOTED
TOM EDWARDS

RECEIVED
JUL 28 1967
OFFICE
STATE HIGHWAY ENGINEER

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

INSTRUMENT

Address reply to:
COMMANDANT
U.S. COAST GUARD
WASHINGTON, D.C.
20591

12 JUL 1967

WHEREAS by an instrument signed on 9 January 1964 and 15 January 1964, the Chief of Engineers and the Secretary of the Army approved the map of location and plans of a bridge to be constructed by the Oregon State Highway Department across Willamette River (Mile 10.9) at Portland, Oregon, under authority of the General Bridge Act of 1946;

AND WHEREAS condition 3 of the instrument of approval fixed the times for commencing and completing construction of said bridge at 15 January 1966 and 15 January 1968;

AND WHEREAS the times for commencing and completing construction have previously been extended to 15 January 1968 and 15 January 1970;

AND WHEREAS condition 4 provides that no deviation from the approved plans shall be made either before or after completion of the structure unless the modification of said plans has previously been submitted to and received the approval of the Chief of Engineers and of the Secretary of the Army;

AND WHEREAS the functions, powers and duties of the Chief of Engineers and of the Secretary of the Army under the General Bridge Act of 1946 have been transferred to and vested in the Secretary of Transportation by section 6(g)(6)(C) of the Department of Transportation Act (80 Stat. 931) and delegated by the Secretary of Transportation to the Commandant of the Coast Guard in title 49 Code of Federal Regulations, part 1;

AND WHEREAS the OREGON STATE HIGHWAY DEPARTMENT has submitted for approval revised plans for the construction of said bridge, which plans are hereto attached:

NOW THEREFORE, This is to certify that the attached plans are hereby approved to supersede the plans attached to the original instrument of approval subject to all the conditions of the instrument of approval except that conditions 1 and 4 are modified as follows:

1. The Commandant may arrange with the Corps of Engineers for the District Engineer in charge of the locality within which the bridge is to be built to supervise its construction in order that said plans shall be complied with.

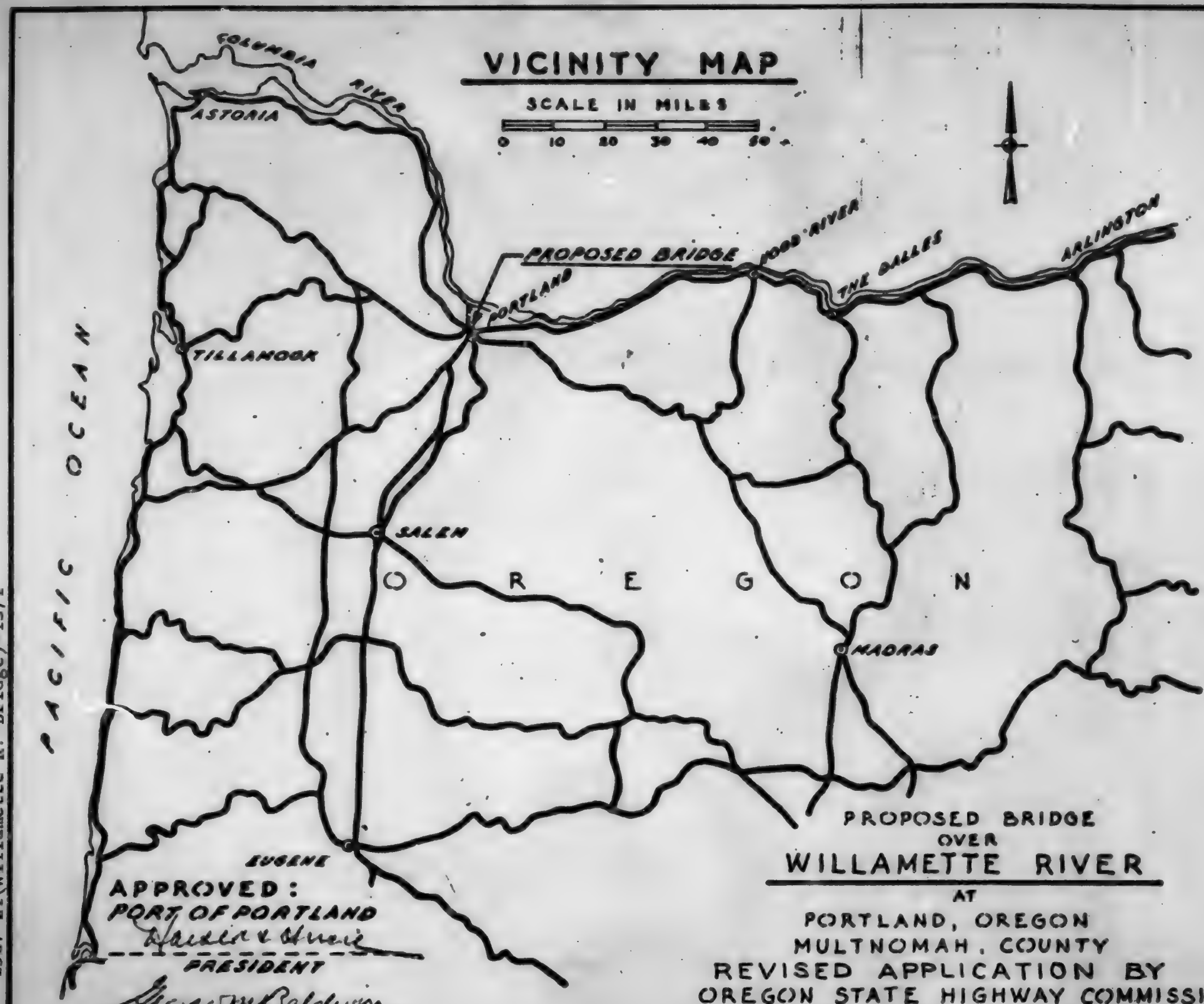
4. No deviation from the approved plans shall be made either before or after completion of the structure unless the modification of said plans has previously been submitted to and received the approval of the Commandant of the Coast Guard.

W. J. SMITH
Admiral, U. S. Coast Guard
Commandant

VICINITY MAP

SCALE IN MILES

0 10 20 30 40 50



APPROVED:
PORT OF PORTLAND
[signature]
PRESIDENT

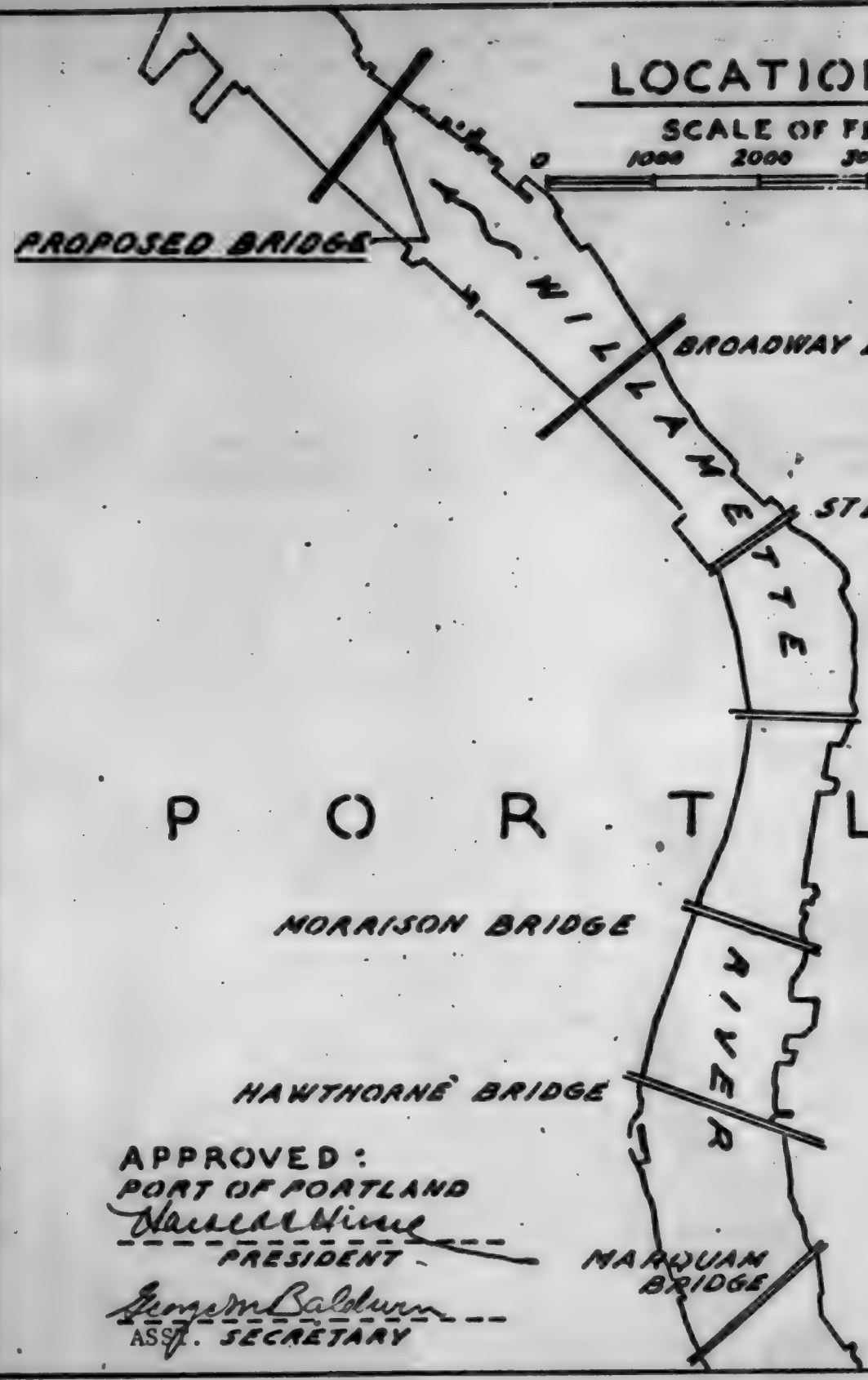
[signature]
ASST. SECRETARY

PROPOSED BRIDGE
OVER
WILLAMETTE RIVER
AT
PORTLAND, OREGON
MULTNOMAH. COUNTY
REVISED APPLICATION BY
OREGON STATE HIGHWAY COMMISSION
FEB. 8, 1967 SHEET 1 OF 3

1507-21(Willamette R.-Bridge)-13/1

LOCATION MAP

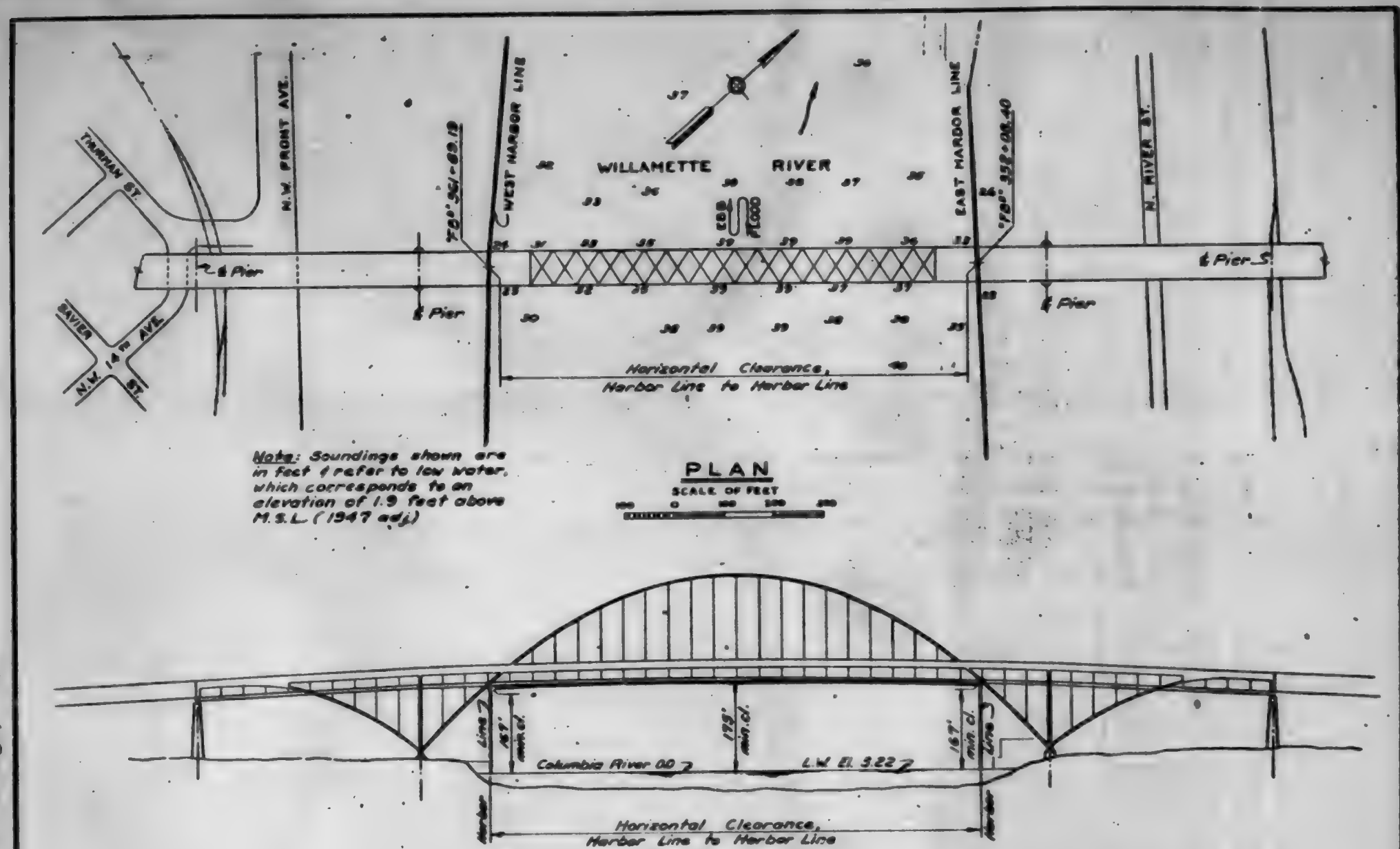
SCALE OF FEET
0 1000 2000 3000 4000 5000



APPROVED:
PORT OF PORTLAND
Harold Hime
PRESIDENT
George M. Baldwin
ASST. SECRETARY

PROPOSED BRIDGE
OVER
WILLAMETTE RIVER
AT
PORTLAND, OREGON
MULTNOMAH, COUNTY
REVISED APPLICATION BY
OREGON STATE HIGHWAY COMMISSION
FEB 8, 1967 SHEET 2 OF 8

1507-21(Willamette R.-Bridge)-13/2



Note: Soundings shown are in feet & refer to low water, which corresponds to an elevation of 1.9 feet above M.S.L. (1947 adj.)

PLAN
SCALE OF FEET
100 0 100 200 300

ELEVATION
SCALE OF FEET
100 0 100 200 300

APPROVED:
PORT OF PORTLAND
Harold L. Lisset
PRESIDENT
George M. Baldwin
ASST. SECRETARY

Columbia River 0.0
M.S.L.
City of Portland
19.17
3.27

RIVER DATUMS

PROPOSED BRIDGE OVER WILLAMETTE RIVER AT PORTLAND, OREGON

MULTNOMAH COUNTY
REVISED APPLICATION BY
OREGON STATE HIGHWAY COMMISSION
FEB. 8, 1967 SHEET 3 OF 3

1507-21(Willamette R.-Bridge)-13/3

RECEIVED
MAR 24 1967
GLENN L. JACKSON, CHAIRMAN
MEDFORD
KENNETH H. FRIDLEY, MEMBER
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND
Coast
Projects
Memi - Portland
Fremont Br

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

March 22, 1967

District Engineer
Corps of Engineers
U.S. Army
628 Pittock Block
Portland 5, Oregon

Your Ref.: NPPOP-MA-1.4
1507-2(Willamette River-Br.)-13

Subject: Proposed Fremont Bridge
Over the Willamette River
Interstate 405
Br. No. 2529

Dear Sir:

By letter dated November 5, 1963, the State Highway Department made an application for approval of plans for construction of a bridge across the Willamette River at Portland designated as the Fremont Bridge.

On January 20, 1964, an instrument was received from the U.S. Army Engineers District, Portland Corps of Engineers, which instrument was signed the 15th of January, 1964 approving the requested construction. Since the approval of the plans, changes have been made in the proposed bridge construction which eliminate two piers in the river and entirely changes the structure from a navigation standpoint.

I am enclosing the original and four prints of a revised application by the Oregon State Highway Commission for your approval. Will you please cancel the instrument dated January 15, 1964, and process an application for a construction permit based on the enclosed drawings.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

IDM:rab
Enc. Forrest Cooper (w/att.)
cc: Tom Edwards (w/att.)
R. L. Porter (w/att.)
Victor Wolfe (w/att.

NOTED
FORREST COOPER

RECEIVED
MAR 23 1967
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
NOV 10 1965
FORTLAND

Corps
Engr
Mgmt
Portland
Transmit Br.

DEPARTMENT OF THE ARMY
PORTLAND DISTRICT, CORPS OF ENGINEERS
628 PITTOCK BLOCK
PORTLAND, OREGON 97205

NPPOP-NA-1.4
1507-21(Willamette R.-Bridge)-13.

4 November 1965

REFERRED TO
BY SECRETARY

Oregon State Highway Department
Salem, Oregon

Gentlemen:

Reference is made to your letter of 28 October 1965 requesting an extension of time for commencing and completing construction of a bridge across the Willamette River at Portland, Oregon.

Condition 3 of the instrument of approval of location and plans of the bridge, signed by direction of the Chief of Engineers and by direction of the Secretary of the Army on 9 January 1964 and 15 January 1964, fixed the times for commencing and completing construction of the bridge at 15 January 1966 and 15 January 1968.

This is to certify that by authority of the Secretary of the Army and the Chief of Engineers, the times for commencing and completing construction of the bridge are extended to 15 January 1968 and 15 January 1970, all other conditions of the original instrument of approval remaining unchanged.

Sincerely yours,

WILLIAM J. TALBOTT
Colonel, Corps of Engineers
District Engineer

Orig & Merchant
Copy & Edwards
11-10-65

RECEIVED
NOV 8 1965
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
NOV - 8 1965
OREGON
STATE HIGHWAY COMMISSION

October 28, 1965

The District Engineer
Corps of Engineers
628 Pittock Block
Portland 5, Oregon

Dear Sir:

Subject: Fremont Bridge over the
Willamette River in Portland
Permit No. NPPOP-WA-1.4/1507
(Will. R. Brs.)-13

Limiting dates stated in the above permit are start by January 15, 1966, and complete by January 15, 1968. Our present planning and program for construction of this structure are not permitting its start nor completion by these dates. May we have a two year extension to each.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

IDM-DJG:jf

RECEIVED
NOV 9 1965
OFFICE OF
STATE HIGHWAY ENGINEER

DEPARTMENT OF THE ARMY

APPROVAL OF LOCATION AND PLANS OF BRIDGE

9-15-64

Whereas *by Title V of an act of Congress approved August 2, 1946, entitled General Bridge Act of 1946 (33 U. S. C., 525–533, as amended) the consent of Congress was granted for the construction, maintenance, and operation of bridges and approaches thereto over the navigable waters of the United States;*

And whereas *section 502(b) of said act provides that: "The location and plans for such bridges shall be approved by the Chief of Engineers and the Secretary of the Army before construction is commenced, and, in approving the location and plans of any bridge, they may impose any specific conditions relating to the maintenance and operation of the structure which they may deem necessary in the interest of public navigation, and the conditions so imposed shall have the force of law;"*

And whereas the OREGON STATE HIGHWAY DEPARTMENT has submitted plans and a map of the location of a bridge to be constructed across WILLAMETTE RIVER (Mile 10.9) at Portland, in the State of Oregon;

Now therefore, *This is to certify that the location and attached plans are hereby approved by the Chief of Engineers and by the Secretary of the Army, pursuant to the above-mentioned act of Congress, subject to the following conditions:*

1. The district engineer in charge of the locality within which the bridge is to be built may supervise its construction in order that said plans shall be complied with.

2. All work shall be so conducted so that the free navigation of the waterway shall not be unreasonably interfered with and the present navigable depths shall not be impaired. The channel or channels through the structure shall be promptly cleared of all falsework, piling, or other obstructions placed therein or caused by the construction of the bridge, to the satisfaction of the said district engineer, when in his judgment the construction work has reached a point where such action should be taken, and in any case not later than ninety *days after the bridge has been opened to traffic.*

3. The approval hereby granted shall cease and be null and void unless the actual construction of the bridge be commenced within 2 year(s) and completed within 4 years from the date of this instrument.

4. No deviation from the approved plans shall be made either before or after completion of the structure unless the modification of said plans has previously been submitted to and received the approval of the Chief of Engineers and of the Secretary of the Army.

In witness whereof *I have hereunto set my hand by direction of the Chief of Engineers this* 9th *day of* January 1964

JACKSON GRAHAM
Major General, USA
Director of Civil Works

In witness whereof *I have hereunto set my hand by direction of the Secretary of the Army this* 15th *day of* January 1964

R. A. HERTZLER
Chief, Office of Civil Functions

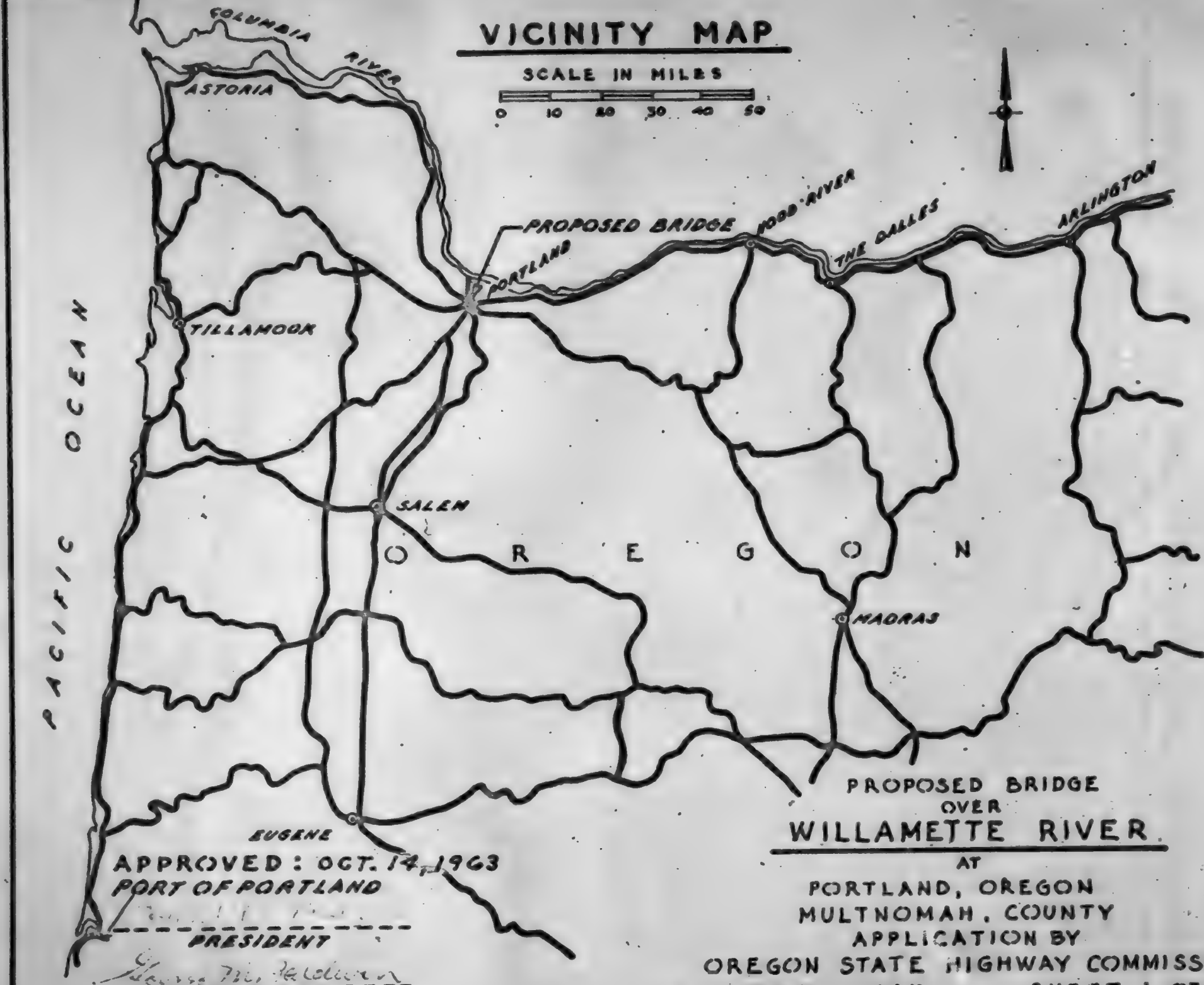
ENG FORM 1 APR 58 92D PREVIOUS EDITION MAY BE USED (EM 1145-2-1)

U.S. GOVERNMENT PRINTING OFFICE : 1958—O-497664
862-111

VICINITY MAP

SCALE IN MILES

0 10 20 30 40 50



APPROVED: OCT. 14, 1963
PORT OF PORTLAND

PRESIDENT

SECRETARY

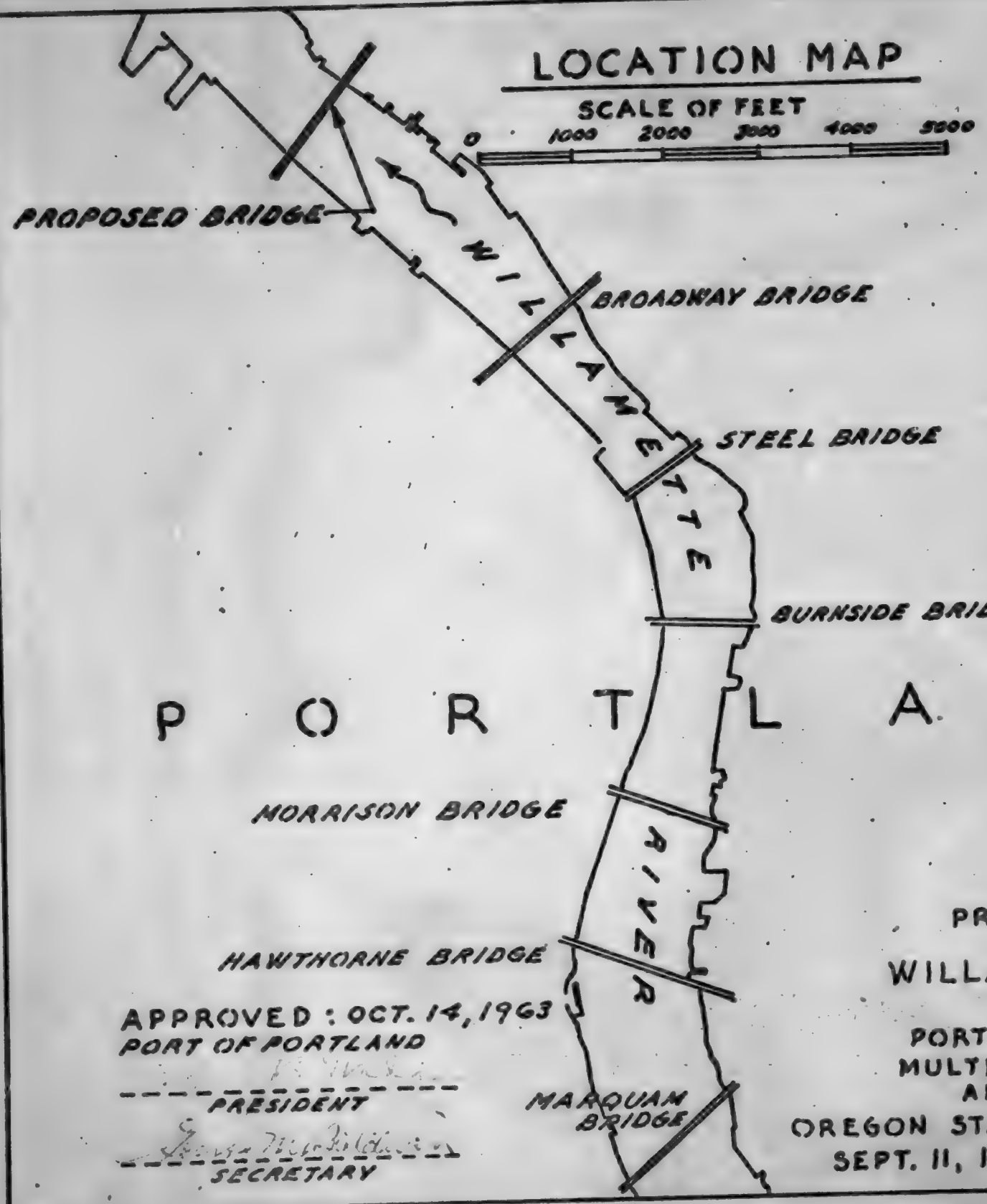
PROPOSED BRIDGE
OVER
WILLAMETTE RIVER
AT
PORTLAND, OREGON
MULTNOMAH COUNTY
APPLICATION BY
OREGON STATE HIGHWAY COMMISSION
SEPT. 11, 1963 SHEET 1 OF 4

Sheet 1 of 3

LOCATION MAP

SCALE OF FEET

0 1000 2000 3000 4000 5000

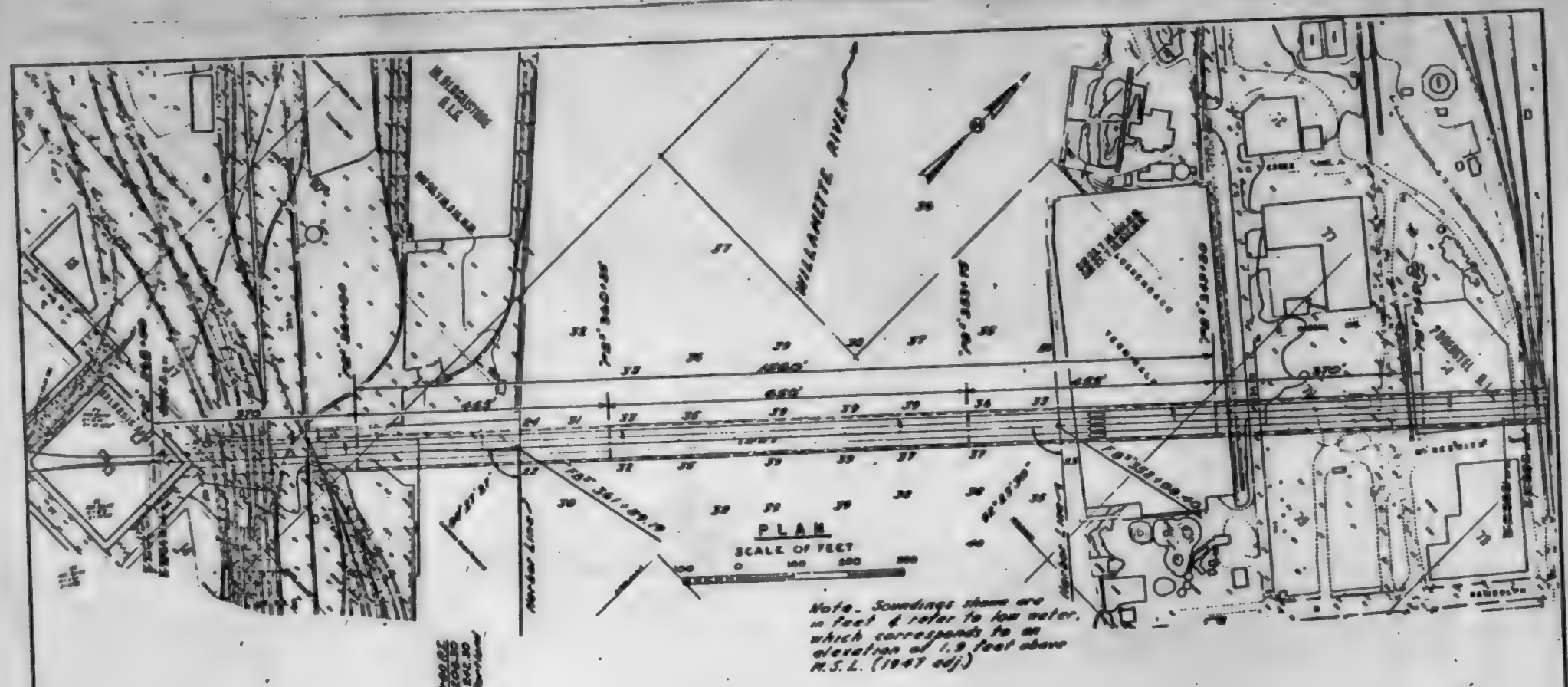


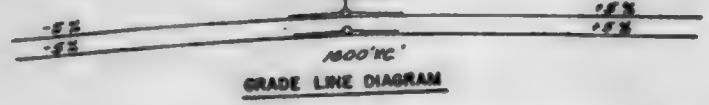
APPROVED : OCT. 14, 1963
PORT OF PORTLAND

PRESIDENT

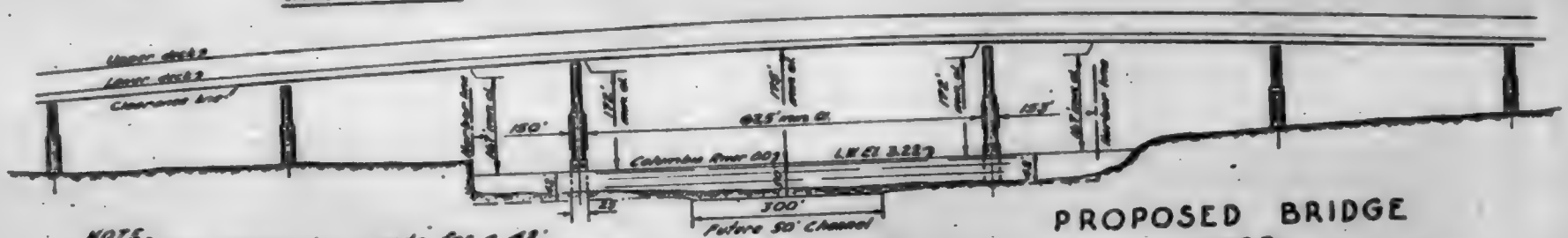
SECRETARY

PROPOSED BRIDGE
OVER
WILLAMETTE RIVER
AT
PORTLAND, OREGON
MULTNOMAH, COUNTY
APPLICATION BY
OREGON STATE HIGHWAY COMMISSION
SEPT. 11, 1963 SHEET 2 OF 4

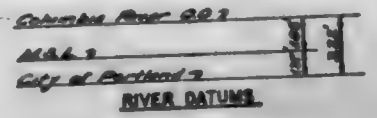

WILLAMETTE RIVER
PLAN
SCALE OF FEET
Note. Soundings shown are in feet & refer to low water, which corresponds to an elevation of 1.9 feet above M.S.L. (1947 adj.)



Note. This drawing is for navigation clearances only. Bridge superstructure is not shown.



NOTE. Pier design to provide for a 42' channel between Harbor Lines. See sheet 4 for detail of pier protection.



APPROVED: OCT. 14, 1963
PORT OF PORTLAND

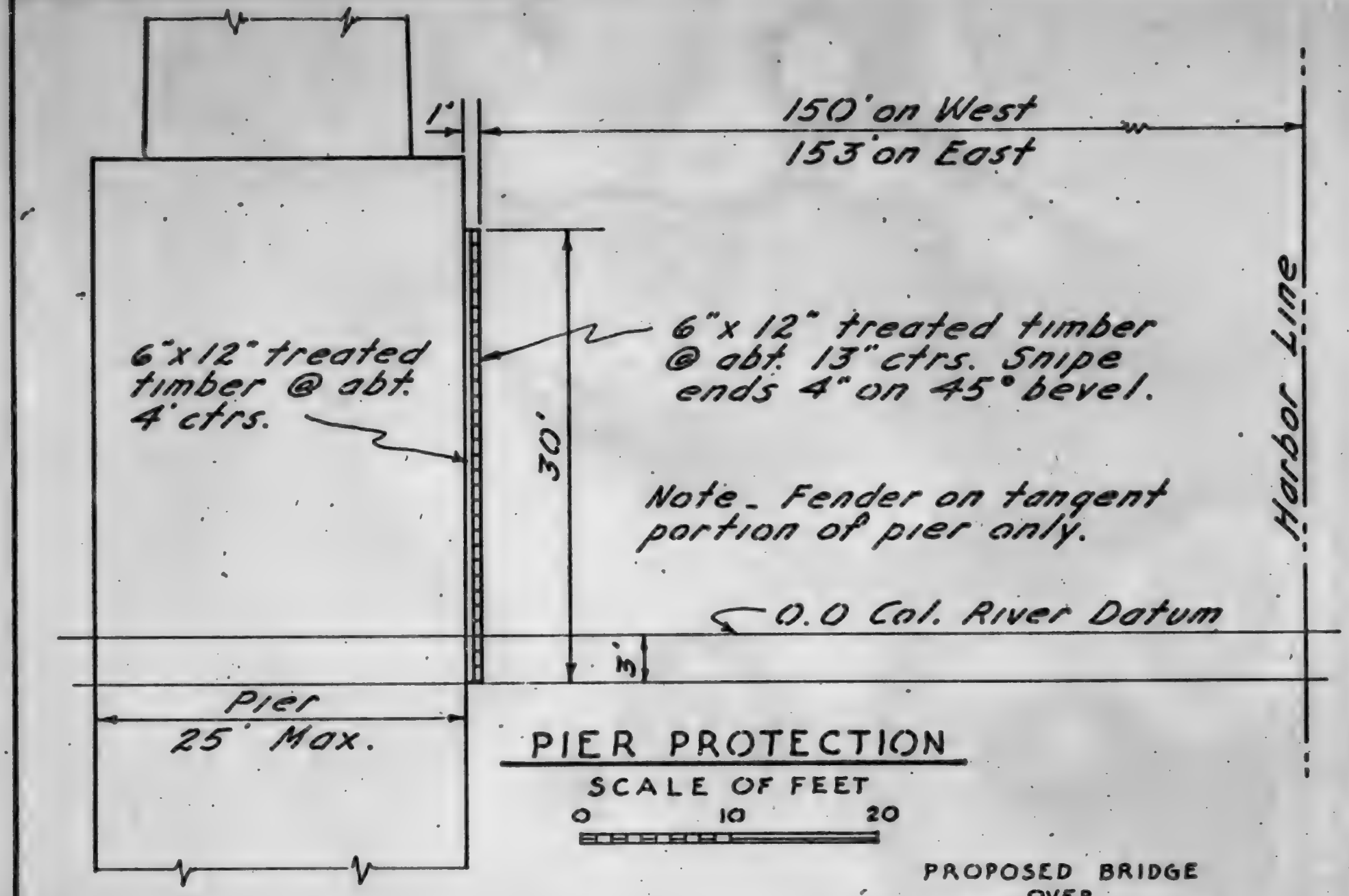
PRESIDENT

George McCall

SECRETARY

PROPOSED BRIDGE OVER WILLAMETTE RIVER AT PORTLAND, OREGON MULTNOMAH, COUNTY

APPLICATION BY
OREGON STATE HIGHWAY COMMISSION
SEPT. 11, 1963 SHEET 3 OF 4


1'
150' on West
153' on East
Harbor Line
6"x12" treated timber @ abt. 4' ctrs.
6"x12" treated timber @ abt. 13" ctrs. Snipe ends 4" on 45° bevel.
30'
Note- Fender on tangent portion of pier only.
0.0 Col. River Datum
Pier
25' Max.

PIER PROTECTION

SCALE OF FEET

0 10 20

APPROVED: OCT. 14, 1963
PORT OF PORTLAND

PRESIDENT

SECRETARY

PROPOSED BRIDGE
OVER
WILLAMETTE RIVER
AT
PORTLAND, OREGON
MULTNOMAH, COUNTY
APPLICATION BY
OREGON STATE HIGHWAY COMMISSION
SEPT. 11, 1963 SHEET 4 OF 4

Proposed Construction of Bridge Across Willamette River At Portland, Oregon	Application by: Oregon State Highway Department, Salem, Oregon

FINDINGS OF FACT

1. Proposed bridge: The Oregon State Highway Department proposes to construct a fixed bridge, double-deck structure with four lanes eastbound on the lower deck and four lanes westbound on the upper deck. It will be a part of the Fremont Interchange-Marquam Bridge Section of the Stadium Freeway in the City of Portland.

2. Bridge to be replaced: None.

3. Preliminary conferences or discussions with applicant and other interests: In conjunction with highway engineers the Port of Portland called a meeting of navigational interests in the Portland Area on 19 July 1963. No objections to the vertical clearance or pier scheme were voiced at the meeting. The President and Secretary of the Port of Portland approved the plans by signatures.

4. Present governing bridge or other structure: The present governing downstream bridge, St. Johns, is a fixed structure providing 1,068 feet horizontal clearance, and vertical clearances of 205 feet above low water and 185 feet above high water. Marquam, the upstream controlling bridge is a fixed structure,and upon completion will provide 350 feet horizontal clearance, and vertical clearances of 120 feet above low water, and 96 feet above high water.

5. Preliminary investigation of District Engineer:

a. Authorized or proposed Federal project, and status thereof: Columbia and Lower Willamette Rivers Below Vancouver, Washington, and Portland, Oregon, authorizes a channel 40 feet in depth and widths from 600 feet to 1,900 feet from Mouth of Willamette River to Portland (Broadway Bridge) and a channel 30 feet in depth and 300 feet in width from that point to Ross Island (maintained by Port of Portland).

b. Navigability and description of waterway: The major portion of deep draft traffic terminates in the 35-foot channel downstream from Broadway Bridge, and a minor portion originates near the Steel Bridge and at the upper limit of the 30-foot channel near the Ross Island Bridge.

c. Description of adjacent tributary area including existing commercial facilities along the waterway: The Portland Harbor includes the following: three publicly-owned terminals handling general cargo, three handling general cargo under private ownership and operation, five flour

and grain, three lumber, two cement, two bulk cement, one bulk creosote, one salt, one paper and paper products terminal, one ore and chemical, and ten fuel oil and gasoline wharves and piers, besides outfitting and repair, sand and gravel, and construction equipment wharves.

d. Overland transportation and effect of the bridge thereon: It will be a part of the Freemont Interchange-Marquam Bridge Section of the Stadium and Eastbank Freeways connecting with Interstate Freeway 5, and will greatly expedite the flow of traffic in the Portland Area.

e. Relation to National Defense: Construction of the bridge would connect freeways in all directions, and be of considerable importance to National Defense.

f. Effect on flood heights and drift: None.

g. Effect on use of waterway if proposed structure is destroyed by accident or design: Destruction of the bridge could completely close river to navigation in vicinity of bridge.

h. Protests, if any, against existing governing bridge or other bridges across waterway and departmental action thereon: Navigation interests are in agreement on vertical and horizontal clearances and pier placement.

i. Standard bridge clearances established for the waterway: None authorized.

6. Views of interested parties, including local and other Federal Agencies: All interested parties are in agreement on vertical and horizontal clearances and placement of piers.

7. Nature and extent of navigation, both existing and prospective:

a. Characteristics and number of vessels using the waterway: Miscellaneous commodities totalling 13,014,692 tons were transported in 1963 to and from Port of Portland by 2,496 deep draft vessels with drafts varying from 34 to 19 feet.

b. Description of commerce in the waterway past the site of the bridge: Principal commodities passing the bridge site include grain, scrap metal, lumber, flour, paper and paper products, crude salt, alumina, zinc concentrates, iron and steel products, petroleum products, coffee, chemicals, autos and sugar.

c. Number of vessel trips: In 1962 vessels totalling 1,190 entered and 1,306 departed Port of Portland.

d. Principal method of handling traffic, whether in single vessels or in tows: Principally handled in deep draft vessels and in addition numerous barges and log rafts are towed through the bridge site.

8. Potential commercial, industrial and physical development along the waterway and effect thereon: It is believed the proposed bridge will meet the requirements of future navigation.

9. Requirements of extremes of navigation such as extreme vessel heights involving a limited number of craft and navigation at extreme river stages: The bridge will provide suitable vertical clearances for vessels of 140-foot mast heights at a 30-foot flood stage in Willamette River.

10. Basis for design of bridge, whether based on needs of navigation, flood control, terrain, or other conditions: Basis for design is adapted to terrain and provides for navigation requirements.

11. Justification for increase in costs of construction, operation and maintenance of the bridge to provide increased clearances to satisfy the demands of navigation including:

a. Cost of bridge without navigational increment and increased costs attributable to added clearances provided for navigation: It was reported by the applicant that the total cost of the bridge was $18,500,000, of which amount $1,500,000 could be attributed to costs of added clearances for navigation.

b. Feasibility and cost of modifying existing vessels to require less clearance: A majority of vessels entering the port are of foreign registry which precludes modification.

c. Feasibility of using vessels requiring less clearance: Not feasible.

d. Restrictions on vessel trips caused by various clearances: It is doubted that vessels will be restricted.

e. Increased annual operating cost to users of the waterway if maximum needs of navigation are not provided: Not applicable.

12. Other pertinent data: None.

13. Conclusions: There being no opposition to the bridge as proposed, it is the conclusion of the District Engineer that the application be approved as requested.

STERLING K. EISIMINGER
Colonel, Corps of Engineers
District Engineer

RECEIVED
NOV 12 1963
FOR FILING

Coast
Projects
Multi. Portland

Forwarded Br.

November 5, 1963

The District Engineer
Corps of Engineers
U. S. Army
628 Pittock Block
Portland 5, Oregon

Dear Sir:

Re: Proposed Bridge over
Willamette River at
Portland, Oregon
Multnomah County

Application is hereby made by the State Highway Department of the State of Oregon at Salem, Oregon for approval by the Chief of Engineer and the Secretary of the Army of plans of a bridge to be constructed across the Willamette River at Portland, Oregon, 11.4 miles above the mouth of the water way as shown on the attached plans. Legal authority for the structure is found in the General Bridge Act of 1946.

Enclosed herewith is a letter of authorization from the Secretary of the State Highway Department authorizing the Secretary to make this application.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

P. M. Stephenson
Asst. State Highway Engineer

Enclosure
cc Mr. Ivan Merchant
IDM/mm

FOFIMF
MAR 26 1970

OREGON STATE
HIGHWAY DEPARTMENT

I-405-8(17)303

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

March 5, 1970

Mr. W. A. Bulley
Deputy Director
Washington State Highway Department
Highways-Licenses Building
Olympia, Washington 98501

Dear Mr. Bulley:

Mr. Shaw has referred to this office for answer, your question concerning our use of Pittsburgh Testing Laboratory for inspection of structural steel being fabricated in Japan.

As you are probably aware, the Bureau of Public Roads has ruled that the employment of outside agencies for this type of work is consulting engineering and as such comes under the purview of their PPM 40-6. This, of course, requires a selection policy by the Department and formal agreements covering the work.

The ball started rolling on the Fremont project when the first contractor for the West Approach complex placed his order for fabricated structural steel with a Vancouver, B.C. plant. Our out-of-state travel regulations and limited personnel experienced in this type of work dictated the use of a consultant for the work.

We sent our chief structural inspector, Mr. Rief, to Vancouver to review the plant, equipment, and personnel of the Vancouver plant and, also, to investigate any Vancouver-based consultants who might have the capability of performing the inspection work for us.

After Mr. Rief's report we selected three United States-based firms known to us and two Canadian-based firms for interviews and invited all to come to Salem for detailed interviews if they were interested in the work. All the firms selected called for interviews and all requested that they be permitted to submit an offer for the work.

In the interviews the general and detailed nature of the work, our requirements, the fabricating plant capabilities, and all other facets of the work are discussed in all detail. If the firm is still interested, they are handed a set of the job plans, specifications, and forms of agreement covering the inspection we require and advised that their offer would be considered.

One Canadian firm and the three domestic firms submitted offers. One Canadian firm did not submit an offer because of lack of available manpower.

In analyzing the consultants' offers, particular stress was laid on manning levels proposed, the nature of the work and all its many complexities, the possibility of an overrun in time of fabrication over the fabricators' very optimistic schedule, and the possibility of a part of the work being subcontracted out to other fabrication plants, the location of the office of the firm with which we would be dealing, knowledge of the firms' capabilities to do the work to specification requirements, and lastly, the fairness of the firms' offer.

Pittsburgh Testing Laboratory was selected for the West Fremont work even though they did not submit the lowest offer for the work.

The ball continued to roll when the second contract for the main span superstructure for the Fremont project went to Murphy Pacific Enterprises of Emeryville, California, with fabrication of steel in two of their plants in the San Francisco Bay area; two plants of the U. S. Steel Co., one in the San Francisco Bay area and one in the Chicago area; suspender strand and appurtenances fabricated at Trenton, New Jersey; and castings and forgings by National Forge at Erie, Pennsylvania.

Under these conditions we called in three domestic firms for interview and received two firm offers. In this instance Pittsburgh Testing Laboratory made the lowest offer which was accepted.

The ball stopped rolling when the contractor for the East Fremont complex placed his order for structural steel with the same Vancouver, B.C., firm holding the order for West Fremont, with partial fabrication to take place in six different shops at four wide-spread locations in Japan and shipped to Vancouver, B.C., for final fabrication, assembly, and partial painting. We made an investigation into the use of Japan-based inspection agencies to handle the work there for us but could not find any with capabilities we require. Inasmuch as we had commissioned Pittsburgh Testing Laboratory to do the West Fremont work, we requested that they make us an offer for the work in both Japan and Vancouver, B.C. Our principal reason for going to a single agency in this case was that we did not want two separate agencies in a single plant working on the same project. Pittsburgh Testing Laboratory made us an offer that we considered reasonable and they were commissioned to do the work.

I am enclosing a copy of our agreement with Pittsburgh Testing Laboratory for the East Fremont work which is typical for all agreements for work of this kind.

We are paying $13.50 a ton for the West Fremont work in Vancouver, $9.91 a ton for the main span superstructure work in the United States, and the price for work in Japan is shown in the enclosed agreement.

In general, we consider it a distinct advantage, almost a must, to have the work done by firms with local and readily accessible administrators.

If I can furnish you any further information, please do not hesitate to call.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

CAG:IDM

cc Lloyd P. Shaw

RECEIVED
MAR 5 1970
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAR 9 - 1970
FOR FILING

I-405-8(17)302
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon
March 3, 1970

To: Memo to the Files

SUBJECT: Fremont Bridge Superstructure
Stadium Freeway
Contract No. 7276
Bridge No. 2529

Meeting held at Metro Division Office on Feb. 25, 1970, regarding erection of Fremont Bridge.

The subject meeting was with Murphy Pacific Enterprises and their erection consultants, Earl and Wright. The Oregon State Highway Division and their consultants, Parsons, Brinckerhoff, Quade and Douglas, were represented, as well as the Federal Highway Administration.

The meeting started promptly at 10 a.m.

The following were in attendance:

Jay Murphy	Murphy Pacific Enterprises, Project Mgr.
Jack Geer	" " " " Engr.
Bill Choate	" " " " Supt.
L. G. Wright	Earl and Wright Engineers, President
Dick Leber	" " " Project Engr.
Tom Edwards	O.S.H.D., Asst. State Highway Engr.
I. D. Merchant	" Bridge Engineer
A. A. Rear	" Asst. Bridge Engineer
A. E. Johnson	" Metropolitan Engineer
Edward Hardt	" Asst. Metropolitan Engineer
R. O. Cunningham	" Resident Bridge Engineer
Alfred Hedefine	P.B.Q. & D. Consultants, Partner
Louis Silano	" " Project Engr.
Steinbrugge	U.S. Dept. of Transportation, Regional Design Engr.
Pilsburry	" " " Asst. Bridge Engr.

Mr. Murphy discussed the three erection methods which they have considered for erection of the center span of the bridge. The first method was a tie-back system. This was not favored, even though the company had the towers, because the vertical cable stays would be 280 feet tall and weigh approximately 300 tons. This would necessitate strengthening parts of the bridge to carry the load and also an extra anchor system would have been required for the cables.

NOTED
TOM EDWARDS

The second method studied was falsework bents in the navigation channel. Again, Mr. Murphy stated that the company had the falsework on hand but chose not to use it because of the risk of falsework for 14 months in a shipping channel.

Mr. Murphy stated that the company had chosen a method whereby the center 900± feet of the span would be erected at water level on Swan Island, then floated into position and be pulled up by jacks. Drawings were shown of all three methods as well as the proposed jacking arrangement. It was acknowledged that Murphy Pacific would require the approval of the Corps of Engineers, Coast Guard, Port Authority and several others before the channel could be closed. Mr. Murphy said he would contact those agencies when he had an approved erection scheme and material ready to make a presentation.

Mr. Murphy stated that their consultants on the hydraulics of the lifting jacks will be Malabar Co. and the chief engineer will be a Mr. Jack Oakley. It was discussed that this lift would be almost 6,000 tons, but it was not a new jacking method—only larger. Mr. Murphy was questioned about all the alternates, and he stated that they felt they had exhausted all possibilities. Mr. Geer stated that there would be 18½ hours of pure jacking time required to raise the span. Mr. Murphy stated that they would ask for a four-day closure of the river channel.

The problem of changes in structural details was discussed. It was noted that the joint at PP14 would require a complete redesign. It will also require that the columns in the back span be pin-connected until the span is raised. At that time the columns can be fixed by bolts.

It was noted that many problems still exist with this erection system, but there are problems with all systems. Mr. Merchant expressed concern that the structure be erected with the proper dead load stresses and in its true vertical position. It was brought out that Murphy Pacific will submit design data and closing procedures for all the involved changes.

Mr. Edwards stated that the State would agree to the jackup method subject to the checking of all the redesign and stress calculations. Such calculations, as necessary, are to be submitted to Parsons, Brinckerhoff, Quade and Douglas.

Mr. Murphy stated that he expects site preparation to start about July 1. He also stated that he is considering shop-painting the steel from Gary, Indiana, in the Portland area. He stated that a portable building would be required, but it would be possible to gain two months' time, so it would be worth it. It was brought out that the painting of the shop

coats is to be inspected by Pittsburgh Testing Lab. Mr. Edwards warned Murphy Pacific that they could expect some trouble with the use of sandblast in this area. Mr. Murphy acknowledged this and also the possibility of air pollution problems with paint. He also stated that Frank Klaas of Los Angeles will probably do the field painting.

Mr. Murphy was asked if he would discuss a monetary rebate on the castings at this time. He gave a history of the castings including the fact that National Forge wants to wait until the castings are made. Mr. Murphy stated that he would protest if a settlement were demanded at this time. Mr. Edwards agreed to delay the discussion of a rebate until the castings are produced.

Mr. Edwards mentioned his concern for E.E.O. problems and advised Mr. Murphy of the interest in this area of local hiring. Mr. Murphy stated he would discuss local hiring at a meeting to be held prior to the start of construction.

The meeting was adjourned at 11:45 a.m.

R. O. Cunningham
Resident Bridge Engineer

ROC:lh

cc: Murphy Pacific Enterprises
Earl and Wright
Tom Edwards
Ivan Merchant
A. E. Johnson
Parsons, Brinckerhoff, Quade and Douglas
U.S. Dept. of Transportation

RECEIVED
MAR 6 1970
OFFICE OF
STATE HIGHWAY ENGINEER

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FEB 27 1970

FOR FILING

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
February 26, 1970

I-405-8(17)303
7276

SUBJECT:

To: MEMO TO THE FILE

On Wednesday, February 25 a meeting was held in Portland with Murphy-Pacific Company, contractor on the Fremont Bridge, represented by Mr. Jay Murphy and his erection consultants, Earl and Wright; Parsons, Brinckerhoff, Quade and Douglas, represented by Hedefine and Silano; and the Highway Division, represented by Edwards, Merchant, Rear, Johnson, Hardt, and Cunningham.

At this meeting basic decision was taken to proceed with erection of the center portion of the main bridge by the "lift-up" method. This proposes that the center 900± feet of the structure be constructed on barges in the Swan Island area, floated into place and lifted up by hydraulic jacks. A preliminary draft or outline of erection procedures is attached.

The above action is taken subject to a review and check of the voluminous calculations concerning erection stresses which Murphy-Pacific has submitted to Parsons, Brinckerhoff, Quade and Douglas to insure that no adverse overstresses would occur during the lift-up period.

Robert Cunningham, Project Engineer, will write up for the files a detailed set of minutes of the meeting.

Tom Edwards
Assistant State Highway Engineer

TE:ja

cc/enc. Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant
Al Johnson

Preliminary Draft 2-25-70

STAGE ONE

1. Erect and position Falsework One 130'-0 West of Panel Point 10 and set Jacks at required elevation. See FW Series drawings for Falsework details and Jacking requirements at various stages of erection. Falsework Two may be erected at any time prior to beginning STAGE THREE.

2. Erect Bearing Assemblies 1 1/2 in. West of theoretical Station at Pier 1W.

3. Erect bottom horizontal strut of Sway Frame at Panel Point 10.

STAGE TWO

1. Erect Arch Section 1A North. Land Section on Falsework and install initial bolts in Splice 1A before releasing the weight of the Section. Complete Splice 1A bolting prior to beginning Step 1 of STAGE TWO.

2. Erect Arch Section 1A South. Repeat the procedure outlined above in Step 1.

3. Fill in arch lateral bracing between Panel Points 8 and 10 with a minimum of 50% of the bolts in each connection before proceeding to Step 4 of STAGE TWO. Complete the bolting of the arch lateral bracing at any time before erecting the Suspended Span.

4. Erect North Sway Frame Column to elevation 107.00 and install initial bolts at base of column before releasing the weight of the Section. Install Temporary Adjustable Strut connecting arch Panel Point A to North Sway Frame Column. See FW Series drawings for Strut Details. Complete the bolting of the column base before erecting Column 9.

5. Erect South Sway Frame Column to elevation 107.00. Repeat the procedure outlined above in Step 5.

6. Erect Sway Frame diagonals to elevation 107.00 with a minimum of 50% of the bolts in the connection before beginning Step G of STAGE TWO. Complete the bolting of the diagonals before beginning STAGE THREE.

7. Erect upper Section of the North Sway Frame Column and install initial bolts in the column connection at elevation 107.00 before releasing the weight of the Section. Complete bolting the Splice before erecting Girder Section 1G.

8. Erect upper Section of the South Sway Frame Column. Repeat the procedure outlined above in Step G.

9. Erect remaining Sway Frame horizontal and diagonal struts with a minimum of 50% of the bolts in all connections before erecting Column 9. Complete bolting of the diagonals and horizontal struts before beginning STAGE THREE.

10. Erect Column 9 North and wind chord between Column 9 and Sway Frame simultaneously. Install the pin at the base. Column and 50% of the bolts at each end of the wind chord before releasing the weight of the Sections.

11. Erect Column 9 South and wind chord between Column and Sway Frame. Repeat the procedure outlined above in Step 10.

12. Erect Columns 8 North and wind chord between Column 8 North and 9 North. Repeat the Procedure outlined above in step

13. Erect Column 8 South and wind chord between Column South and 9 South. Repeat the procedure outlined above in St .

14. Erect Girder Section 1G North. Land Section on falsework, install initial bolts in Column Connection 10G North and install temporary cable ties before releasing the weight of the Section. Release the Temporary Adjustable Strut connecting arch Panel Point 9 to the North Sway Frame Column. NOTE The Strut will have to be reconnected later in the back span erection. Complete bolting connection 1G before beginning STAGE THREE.

15. Erect Girder Section 1G South. Repeat the procedure outlined above in Step 14.

16. Install the pins at the top of Columns 8 and 9 by adjusting the jacks at Falsework One as shown on the FW Series drawings.

17. Erect Lower Deck Floor Beams, bracing and Stringers between Panel Points 8 and 10. When erected, each member shall have a minimum of 50% of the total number of bolts in each connection before its weight is released. All bolts in these connections must be installed prior to forming for the concrete deck.

18. Erect Orthotropic Deck Sections 1D, 2D, and 3D. Install a minimum of 50% of the total number of bolts in each floor beam web connection before releasing the Weight of the Section.

19. Drill holes in longitudinal Deck Splices and install all bolts before releasing Falsework One. Install all bolts in transverse Splices 1D and 2D before releasing Falsework One. NOTE One side of Traverse Deck Splice 2D will be drilled after the erection of Deck Sections 1D, 2D, and 3D.

STAGE THREE

1. Adjust Jacks at Falsework Bents One and Two to elevations shown on FW Series drawings.

2. Erect Arch Section 2A North and install initial bolts in Splice 2A while holding the weight of the Section. Raise the jacks at Falsework Two until the jacks contact the bottom of Arch Section 2A North. Release the weight of the Section.

3. Adjust the Jacks at Falsework One to the required elevations and erect Column 7 North pinning the Column at connections 7A and 7G.

4. Erect Column 6 North and wind chord between Columns 6 North and 7 North simultaneously. Install the pin at the base of Column 6 North and 50% of the bolts at each end of the wind chord before releasing the weight of the sections.

5. Erect Column 5 North and install initial bolts before releasing the weight of the Section. Complete bolting the Column Splice before erecting Girder Section 2G North.

6. Erect Windtie between Columns 5 North and 6 North. Install the 2"Ø pin between the wind chord and Column 5 North and 50% of the bolts between the wind chord and Column 6 North before releasing the weight of the Section.

7. Erect Column 4 North, install pin at base of Column and block between the column and the arch for stability before releasing the weight of the Column.

8. Adjust Jacks at Falsework Bents One and Two to required elevations and erect Girder Section 2G North. Install initial bolts in Girder Splice 1G North. Begin releasing the weight of the Section and install pin in Column connection 6G North Continue to release the weight of the Section and install pin in Column connection, 5G North. Release the remaining weight of the Section after pin is installed in Column Connection 5G North. Complete bolting Girder Splice 2G North before proceding to Step 9 of STAGE 3.

9 Adjust Jacks at Falsework Bents One and Two to required elevations and erect Girder Section 3G North. Install initial bolts in Girder Splice 2G North. Raise the Jacks at Falsework Two until the jacks make contact with the bottom of the Girder Section. Install Pin in Column Connection 4G by raising the jacks at Falsework Two at the Arch level.

10. Erect Arch Section 2A South. Repeat the procedure outlined in Step 2 Stage three.

11. Fill in arch lateral bracing between Panel Points 5 and 8 with a minimum of 50% of the bolts in each connection before releasing the level on Falsework One. Complete the bolting of the arch lateral bracing at any time before erecting the Suspended Span.

12. Erect Column 7 South. Repeat the procedure outlined in Step 3 STAGE THREE.

13. Erect Columns 6, 5, and 4 South and wind chords between Columns 5 and 7 South. Repeat the procedures outlined in Steps 4,5,6, and 7 of STAGE THREE.

14. Erect Lower Deck Floor Beam at Panel Point 5 and bolt up each end 100% before erecting Girder Section 2G South.

15 Erect Girder Section 2G South. Repeat the procedure outlined in Step 8 of STAGE THREE.

16. Erect Girder Section 3G South. Repeat the procedure outlined in Step 9 of STAGE THREE.

17. Erect Lower Deck Floor Beams, Bracing and Stringers between Panel Points 4 and 8. When erected, each member shall have a minimum of 50% of the total number of bolts in each connection before its weight is released. All bolts in these connections must be installed prior to forming for the concrete deck. NOTE Stringers between Panel Points 7 and 8 are not to be erected until Falsework One has been removed.

18. Erect Orthotropic Deck Sections 4D, 5D, and 6D. Install a minimum of 50% of the total number of bolts in each floor beam web connection before releasing the weight of the Sections

19. Drill holes in Longitudinal, Deck Splices and install all bolts before releasing Falsework One. Install all bolts in transverse Splices 3D, 4D, 5D.

20. Adjust jacks at Falsework Bents One and Two to required elevations. Jack tie girder 4 1/4" longitudinally to the west by adjusting the temporary cable ties installed during STAGE TWO. See FW Series drawings for details. Erect Girder Section 4G North. Install initial bolts in Splice 3A. Apply additional load at the west end of the Girder Section with crane and install initial bolts in Girder Splice 3G North. See FW Series drawing for the amount of additional load required at the west end of Section 4G. Complete Bolting of the Girder Splice 3A before erecting Girder Section 7G North.

21. Erect Girder Section 4G South. Repeat the procedure outlined in Step 2D of STAGE THREE.

22. Adjust the jacks at Falsework Two. Falsework One may now be released provided that the Orthotropic deck panels 3D, 4D, and 5D are bolted as noted in Step 19 of STAGE THREE. After the release of Falsework One the Temporary Adjustable Strut connecting Panel Point A9 to Sway Frame Columns must be connected.

23. Erect Lower Deck Floor Beams and Bracing between Panel Points 7 and 8. When erected each member shall have a minimum of 50% of the total number of bolts in each connection before its weight is released. All bolts in these connections must be installed prior to forming for the concrete deck. NOTE Stringers between Panel Points 7 and 8 are not to be erected until Falsework Two has been removed.

24. Erect Orthotropic Deck Section 7D and 100% bolt the transverse Splice 6D and longitudinal Splices at any time before erecting Girder Section 7G North

STAGE FOUR

1. Erect Girder Section 5G North. Install initial bolts in Girder Splice 4G North before releasing the weight of the Section. Complete bolting Girder Splice 4G North before erecting Arch Section 3A North.

2. Erect Girder Section 5G South. Repeat the procedure outlined above for Girder Section 5G North.

3. Erect Columns 11 and 12 North and South. Install pin at the top of each Column before releasing its weight

4. Erect Arch Section 3A North. Install initial bolts in Arch Connection 4A North and connect Columns 11& 12 North to Arch before releasing the weight of the Section. Complete bolting Arch Splice 4A North before erecting Arch Section 4A North.

5. Erect Arch Section 3A South. Repeat the procedure outlined above for Arch Section 3A North.

6. Erect wind chords, lower deck floor beams, bracing and stringers between Panel Points 10 and 12. When erected, each member shall have a minimum of 50% of the total number of bolts in each connection before its weight is released. All bolts in these connections must be installed prior to forming for the concrete deck.

7. Erect Orthotropic Deck Section 8D. Install a minimum of 50% of the total number of bolts in each floor beam web connection before its weight is released. Install initial bolts in Transverse Deck Splice 7D. Apply an upward vertical load of 125 tons to the North Girder 6' east of Panel Point 12 with Derrick Barge Marine Boss and maintain this load while holes for initial bolts are drilled in the North longitudinal deck Splice. Install initial longitudinal bolts and release the 125 ton load. Repeat this procedure at the South Girder and South longitudinal Splice. Complete bolting the longitudinal Splices and trnsverse deck Splice 7D before erecting the Suspended Span.

STAGE FIVE

1. Erect Girder Section 6G North with Arch Section 5A North suspended from the Girder Section with cables attached to handhoists and Column 13 North Pin connected to the Girder. Install initial bolts in Girder connection 5G. Apply an addition 100 tons of upward load to the girder with Derrick. Barge. Marine. Boss

then raise Arch Section 5A into position with the hand hoists and install initial bolts in Arch Splices 6A and 7A and connect Column 13 to Arch. Release the weight of the Section.

2. Erect Girder Section 6G South, Arch Section 5A South and Column 13 North. Repeat the procedure outlined above in Step 10.

3. Erect floorbeam at Panel Point 13 and wind chords, bracing, and stringers between Panel Points 12 and 13. When erected, each member shall have a minimum of 50% of the total number of bolts in each connection before its weight is released. All Bolts in these connections must be installed prior to forming for the concrete deck.

4. Erect Orthotropic Deck Section 9D. Install a minimum of 50% of the total number of bolts in each floor beam web connection before its weight is released. Apply an upward vertical load of 100 tons to the North Girder 6 feet east of Panel Point 14 with Derrick Barge Marine Boss and maintain this load while holes for initial bolts are drilled in the North longitudinal deck Splice. Install initial longitudinal bolts and release the 100 ton load. Repeat this procedure at the South Girder and South longitudinal Splice. Complete bolting the longitudinal splices and transverse deck Splice 8D before erecting the Suspended Span.

STAGE SIX

1. Erect Portal Frame at Panel Point O. See FE Series drawings for detailed procedure.

2. Erect Girder Section 7G North. Install initial bolts in Girder Splice 6G North before releasing the weight of the Section. Complete bolting Splice 6G North before erecting Section 8G North.

3. Erect Girder Section 8G North. Install initial bolts in Girder connections 7G North and 8G North before releasing the weight of the Section. Complete bolting Splices 7G and 8G North before releasing Falsework Two.

4. Erect Girder Sections 7G and 8G South. Repeat the procedures outlined above 1" Steps 2 and 3.

5. Erect lower deck hangers, wind chords, floorbeams and stringers between Panel Points O and 4. When erected each member shall have a minimum of 50% of the total number of bolts in each connection before its weight is released. All bolts in these connections must be installed prior to the forming for the concrete deck. NOTE These members may be erected after Orthotropic Deck Sections 11D, 12D, and 13D have been erected.

6. Erect Orthotropic Deck Sections 11D, 12D, and 13D. Install initial bolts in transverse Splices 12D and 13D. Drill holes in longitudinal deck Splices and install initial bolts before releasing Falsework Two. These longitudinal and transverse deck Splices must be 100% bolted before erecting Suspended Span.

Form FHWA-121 (12-67)

RECEIVED
FEB 25 1970
FOR FILING

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Bureau of Public Roads
Box 300
Salem OR 97308

DATE: February 19, 1970

In reply refer to: 08-35-EC

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

I-405-8(17)303
7276

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure
Consultant Agreement for Shop Inspection

The consultant agreement with the Pittsburg Testing Laboratory for the shop inspection of the steel for the subject project is hereby approved as submitted with Mr. Merchant's February 10 letter.

Copy-Merchant
2-24-70

NOTED
TOM EDWARDS

RECEIVED
FEB 24 1970
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
MAR 10 1970
FOR FILING

I-405-8(17)303

7276

H 1

2.3.71

February 9, 1970

MISC. CONTRACTS and AGREEMENTS No. 3904

Pittsburgh Testing Laboratory
611 S. E. Morrison Street
Portland, Oregon 97214

Attention: Donald R. Scott
Manager

Gentlemen:

MAR 12 1970

Attached for your records is a fully executed copy of an agreement covering inspection of steel for the Fremont Bridge Main Structure, Contract 7276.

We have retained a fully executed copy of this agreement for the Commission's files.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

fkm
Att.

cc Ivan Merchant
(8 xerox agreements attached)

JAN 28 1970

FOR FILING

I-405-8(17)303
7276

January 22, 1970

Oregon State Highway Commission

Gentlemen:

Steel for the Fremont Bridge superstructure, Contract 7276, is being fabricated by the contractor at his Emeryville and Richmond, California, plants with additional steel, castings and wire rope being furnished by other suppliers located at South San Francisco, California; Gary, Indiana; Erie, Pennsylvania; and Trenton, New Jersey. Inspection of the material and fabrication practices is necessary at the various plant sites and in common with our present practice, we propose to engage a consultant firm to do this work.

Pittsburgh Testing Laboratory has made an offer of inspection service for the unit price of $9.91 per ton for inspection of the steel and $61 per day plus costs of travel and per diem for inspection of castings and wire rope with a total guaranteed top limit for all work of $220,000.

We recommend your approval and request authority for the Secretary to sign the agreement for and on your behalf.

This is a federal-aid project and we have the concurrence of the Bureau of Public Roads.

This matter will be on the agenda for your consideration at the February 3 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Query -- Please furnish the Bridge Division with eight copies of the completely executed agreement for distribution to the Bureau of Public Roads and interested parties within the Highway Division.
R. L. Porter
Tom Edwards
V. D. Wolfe
Ivan Merchant
V. E. Skoog
L. H. Young
A. E. Johnson

CAG:dh sr

RECEIVED
NOV 21 1969
FOR FILING

I-405-8(17)313
1276

November 20, 1969

1493

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
Box 300
Salem, Oregon 97308

Re: Your File 08-35.6
Oregon Project I-405-8(17)303
Fremont Bridge Castings

Dear Sir:

Your memorandum dated November 13, concurring in a change in specifications for the castings of the Fremont Bridge, has been received. This change was requested by Murphy Pacific Enterprises by their letter of November 3, of which you have a copy.

I am enclosing a copy of a letter from our consultants (Parsons, Brinckerhoff, Quade and Douglas) dated November 10 to Murphy Pacific Enterprises on this matter. Your attention is called to the consultant's letter, concurred in by the State, requiring a more restrictive quality of casting in the hub area than concurred in by your November 13 memorandum. We believe the more restrictive requirement as proposed by the consultant can be obtained by the fabricator and will result in a higher quality of casting.

You will be advised of the monetary considerations due to the specification change as soon as they are finalized with the Murphy Pacific Enterprises.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant
A. E. Johnson (enc.)
R. O. Cunningham (enc.)

IDM:jf ja

Form FHWA-12T (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Bureau of Public Roads
Box 300
Salem OR 97308

DATE: November 13, 1969

In reply refer to: 08-35.6

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon
Attention: Mr. I. D. Merchant

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Castings

We have reviewed your telephone request and a copy of the contractor's November 3 letter for a change in the casting specifications on the subject project. Mr. Merchant requested our concurrence in this change. This will alter the contract addendum Revision Letter No. 3 dated June 17, 1969. The extent of Public Roads approval is as follows:

Description	Original Contract Specification	BPR Approved Change
Magnetic Particle Inspection		
Type 1 Linear Discontinuity (Hot tears & cracks)	None permitted	3/8" or less* ✓
*At the pin Seat and 6" from the edges of the Seat	None permitted	None permitted ✓
Type 11 Shrinkage	Degree 3	Degree 4 ✓
Radiographic Inspection (ASTM Designation E280-69)		
1.4.3 Category C Shrinkage		
Type 1	Severity Level 1	Severity Level 3* ✓
*At the pin Seat and 6" from the edges of the Seat	Severity Level 1	No change ✓
Type 11	Severity Level 2	No change ✓
Type 111	Severity Level 3	No change ✓
1.4.4 Category D		
Hot tears	None permitted	Severity Level 4*
Cracks	None permitted	None permitted
*At the pin Seat and 6" from the edges of the Seat	None permitted	None permitted

Merchant 1 - NOTED
RO IVAN D. MERCHANT

(more)

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

The intent of the asterisk is to require more control where design and service requirements would be critical. It is felt that Magnetic Particle and Radiographic Inspections should be consistent in this area. In such an evaluation consideration should be given to such factors as pressure, temperature, section thickness, applicable design, safety factors, vibration, shock, resistance to corrosion, and the involvement of dangerous gases or liquids.

It would appear that with the above changes some price adjustment should be available.

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
AM NOV 17 196- PM
7,8,9,10,11,12,1,2,3,4,5,6

RECEIVED
NOV 14 1969
OFFICE OF
STATE HIGHWAY ENGINEER

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117
TELEPHONE (212) 233-6300
ENGINEERS

November 10th, 1969

Mr. Jay P. Murphy
Contracting Manager
Murphy Pacific Enterprises
4300 Eastshore Highway
Emeryville, California

Re: Fremont Bridge
Fixed Shoe Castings

Gentlemen:

Your proposed request to amend the requirements of Section 410-3.60 of the Special Provisions and subsequent addenda pertaining to Bid Item 9 "Castings and Forgings," contained in your letters dated October 24, 1969 and November 3, 1969, has been carefully reviewed. Your requested changes involve the minimum acceptable standards and are as follows:

Radiographic Inspection

1.4.3 Category C - Shrinkage
Type I - Severity Level 3

1.4.4 Category D - Hot Tears and Cracks
Cracks - none permitted
Hot Tears - Severity Level 4

Magnetic Particle Inspection

Type I Linear Discontinuity
(Hot tears and cracks) - 3/8" or less permitted ✓

Type II Shrinkage - Degree 4 ✓

NOTED
NAVAL MERCHANT

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
AM NOV 13 1969 PM
7,8,9,10,11,12,1,2,3,4,5,6

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

The revisions proposed by you are acceptable to us and have been cleared with both the State Highway Department and the Bureau of Public Roads with the following stipulations:

(1) For Magnetic Particle Inspection - Type II Shrinkage that the original discontinuity severity Degree 3 be adhered to in the hub (pin) area of the castings and that Degree 4 serve as acceptance in all other areas.

(2) That any and all monetary savings accrued from these changes be credited to the State of Oregon.

Would you kindly acknowledge the modification contained in Item 1 above and also submit the necessary information referred to in Item 2 in order that approval may be secured.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano

L.G. Silano

LGS:mc

cc: Ivan Merchant
R.O. Cunningham

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
AM NOV 13 1969 PM
7,8,9,10,11,12,1,2,3,4,5,6

Form FHWA-320 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Bureau of Public Roads
Box 300
Salem OR 97308

I-405-8(17)303

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

1276

DATE: November 18, 1969

In reply refer to: 08-35.6

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

Edwards

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure

The contract special provisions call for the rounding of unfinished edges of steel plate to a radius of 1/16 inch. We believe it would be desirable to also specify grinding to be done in the direction of stress to avoid notch affects transverse to the stress. We would like to have this requirement included in the contract special provisions if permitted by the project status.

Copy - Merchant 11-21-69

NOTED
TOM EDWARDS

RECEIVED
NOV 20 1969
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
NOV 14 1969

Form DOT-1321 (12-67)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Bureau of Public Roads
Box 300
Salem OR 97308

DATE: November 7, 1969

In reply refer to: 08-35-EC

FOR FILING
I-405-8(17)303

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

7276

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

Edwards

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure
Consultant Agreement for Shop Inspection

Reference is made to Mr. Merchant's November 5 letter describing the selection of a consultant firm to make the shop inspections of the fabrication of the structural steel for the subject project.

We concur in your selection of the Pittsburg Testing Laboratories. Having previously furnished these services they are familiar with the State's requirements. They appear to be adequately staffed at each shop site and the quoted price is reasonable. We are therefore prepared to approve a contract for consultant services upon receipt of three copies of an executed agreement prepared in accordance to PPM 40-6.

1214

NOTED
TOM EDWARDS

11-13-69

RECEIVED
NOV 12 1969
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
NOV 1 1969
FOR FILING

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Bureau of Public Roads
Box 300
Salem OR 97308

I 405-8(17)303
7276

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon
Attention: Mr. I. D. Merchant

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

DATE: October 27, 1969

In reply refer to: 08-35.6

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure
Proposed Consultant Agreement

Your letter of October 17, 1969 submitted the proposed consultant's agreement. I find the first sentence in the last paragraph of page 2 is the same as the agreement you had with Herman Adalist. As you recall, this was quite a controversial point. I feel you should review this point and clarify that full time inspection is necessary during peak production or a similar statement indicating when full time inspection is expected.

Also on page 8 you have shown only one bid item for payment. Perhaps you might consider items for Ultrasonic, Magnetic Particle, and Radiographic inspection when they are in excess of contract requirements.

Orig. to Merchant
Copy to Files
10-28

RECEIVED
OCT 28 1969
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
TOM EDWARDS

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

FORM S.80 (10-57)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon
October 21, 1969

To: Memo to the Files

SUBJECT: Fremont Bridge Superstructure
Contract 7276
Preconstruction Conference

On October 15, 1969, at 10:30 a.m. a preconstruction conference for the Fremont Bridge Superstructure project was held in the Metropolitan Division office. Those attending the conference are listed below:

Name	Representing
*Jay P. Murphy	Murphy-Pacific Enterprises
E. D. (Jack) Gear	" " "
Peter Melrose	" " "
Gary Swift	" " "
W. A. (Bill) Choate	" " "
*H. A. Schell	Bureau of Public Roads
Jack Griffith	Portland General Electric Co.
Don Heuer	" " "
*R. T. Beasley	" " "
F. L. Shrives	" " "
*M. G. Zeazeas	Northwest Natural Gas Co.
*Clay Brown	Pacific Power & Light Co.
Don Groth	" " "
*Guy E. LaSalle	Spokane, Portland & Seattle Railway Co.
Everett D. Bowder	Workman's Compensation Board, Accident Prevention Division
*Clifford R. Lafferty	" " "
*Mario J. Martini	Portland Bureau of Traffic Engineering
*R. L. Thomas	Portland Terminal Railroad
*Tom Scanlon	Union Pacific Railroad
*A. J. Mathes	Pacific Northwest Bell Telephone Co.
Alfred Hedefine	Parsons, Brinckerhoff, Quade & Douglas, N.Y.C.
*Louis G. Silano	" " " "
*William J. Lowe	American Bridge Division - U.S. Steel
E. L. Seymour	" " "
*Ivan D. Merchant	Oregon State Highway Dept., Salem
*T. W. Litchfield	" " " " "
*Edgar L. Johnsen	" " " " "
Alfred A. Rear	" " " " "
A. E. Johnson	" " " " Portland
J. H. Versteeg	" " " " "
K. D. Limbocker	" " " " "
D. L. Peterson	" " " " "
Ed Hardt	" " " " "
*R. Cunningham	" " " " "
*Jack Heala	" " " " "

*Received copy of this memo.

Mr. Robert Cunningham, Resident Bridge Engineer for the project, introduced Mr. Jay Murphy of Murphy-Pacific Enterprises, which is a joint venture of Murphy-Pacific Corporation and Murphy-Pacific Salvage Company. He explained that his father, Phil Murphy, is the project sponsor and has the ultimate authority for the project. He introduced Mr. Jack Geer, Project Engineer, who will be in charge of preliminary planning; and Mr. Bill Choate, who will be Project Manager for the erection of the bridge.

Jack Hesla showed, by way of maps of the project, conflicts with steel erection and aerial power lines on the east side of Front Avenue and on the east side of River Street.

Mr. Geer told of his company's plans for constructing a pile-supported falsework bent in Front Avenue. It developed that the City of Portland Traffic Bureau will request that this falsework be located in the left turn refuge lane in Front Avenue. Mr. Geer said that now that the location for this falsework is definite he will work up final plans showing details of the falsework. He asked that the underground utilities in the area be located in order to avoid conflicts. The various utility companies involved will locate their facilities, and Mr. Cunningham will tie these into the bridge centerline and prepare a drawing showing same. It was anticipated by Mr. Geer that the falsework construction will begin about July, 1970.

Mr. Hesla mentioned the conflict between steel erection and the aerial power lines along Front Avenue. He said the State's position was that since these were in conflict with our construction it would be the utility companies' obligation to remove the conflict. Mr. Beasley (P.G.E.) said his company's position is that they expect to be required to make one move to resolve a conflict, but since their plans called for two moves with these lines they felt that some compensation was due them. Mr. Hesla countered this by saying if they chose to remove the conflict with a double move this was their decision but that no compensation would be called for from the Highway Department. Mr. A. E. Johnson suggested to Mr. Beasley that he write the Highway Department a letter outlining his position so that our Department could study this further. Mr. Geer said that it appeared that the lines from 100 to 120 feet each side of centerline would have to be dropped since his steel sections had to be raised through the position now occupied by these lines. He estimated that this phase of erection would take approximately two months.

Mr. Beasley expressed his company's concern for their underground facility in Front Avenue with regard to the vibration caused by the contractor's falsework piling. He wondered if the contractor had considered a vibratory type hammer to cut down on subsurface disturbance. Mr. Geer said that his company did not own any of this type of equipment.

Mr. Lafferty of the Workmen's Compensation Board spoke briefly on his concern for safety on the project and mentioned that his people will be watching especially for proper clearance between crane booms and aerial power lines. Mr. Murphy replied by stating that his company's safety rules may be more stringent than the State of Oregon's and that they maintain a full-time Safety Department under Mr. Roller and at the appropriate time will go over safety procedures with Mr. Lafferty's people.

Mr. Cunningham gave Mr. Geer a construction schedule for the Andersen-Hannan Company, contractors on the West Fremont project, for his use in coordinating his work with this project. He mentioned it might be necessary to detour 14th and Thurman traffic around the present 15th and Savier route while Murphy-Pacific is working in this area.

Mr. Ted Litchfield introduced Mr. Guy LaSalle, S.P. & S. Railroad; Mr. Dick Thomas, Portland Terminal Railroad; and Mr. Tom Scanlon, Union Pacific Railroad, and mentioned to the contractor the railroads' and the State's concern for the railroad tracks west of Front Avenue. He called to the contractor's attention that there are 150 to 200 train movements per day over these tracks and that our specifications specifically call for protection against falling objects in this area. He also mentioned the location of spur tracks under the east end of the bridge but commented that he didn't believe these would create any problems.

Mr. Murphy said that his company has worked over many railroad tracks and was cognizant of the problems involved. He said their safety representative and their insurance carrier will work on this problem and will deal with the railroad through the Highway Department in order to satisfy both.

Mr. Murphy went on to speak about his company's plans for actual construction of the bridge. He said that pile driving, electrical work, supplying of reinforcing bars will be subcontracted. So far, the only subcontractor that has been selected is Adhesive Engineering Company for the orthotropic deck wearing surface. He said that American Bridge Division will detail all the structural work in their Birmingham, Gary, and Los Angeles offices. They will also fabricate all steel except the tie girder and the arch rib, which will be fabricated by Murphy-Pacific in their Emeryville and Richmond plants respectively. American Bridge Division's fabrication will be done in their South San Francisco and Gary plants. All steel will be assembled and shipped to the project from their Richmond yard by barge. The South San Francisco fabrication of the orthotropic deck should start December 1 of this year. The Gary plant should start fabricating January 31, 1970, and Murphy-Pacific portion of the fabrication should also start on January 31.

Mr. Murphy outlined two schemes for erection of the main span--one, by conventional methods using three falsework piers in the river; and two, by completely assembling the center span on barges somewhere near the

site, closing the river channel for 48 hours and jacking the main span into position. Both plans are presently under study, and a decision has not yet been reached regarding the method to be adopted.

He went on to say that Mr. Bill Lowe of American Bridge Division will be responsible for coordination of the shop detailing work. Subcontracts will be the responsibility of Mr. Pete Melrose; and Mr. Gary Swift and Mr. Bill Choate will work on the contractor's E.E.O. program. He also outlined Murphy-Pacific's preferred procedure on change orders. He said that on any shop changes a detailed cost estimate will be provided to the Highway Department whether the work involves the prime contractor or a subcontractor. He said his firm would prefer to handle field changes by force account methods. He also said that his company has not yet decided on the wire rope or casting suppliers.

Mr. Merchant commented that the State cannot select an inspection agency for the structural steel work until the rope and casting suppliers are known since it is desirable to have all the inspection done by one agency. He said he would like to have the names of these suppliers by November 1 so that an inspection agency can be selected. He also made it clear to Murphy-Pacific's people that now that the project is under contract Mr. A. E. Johnson will be in direct charge of construction. He also brought to the contractor's attention that the Highway Department does not allow the use of aluminum pipe for pumping concrete.

Mr. Ed Johnsen, the Highway Department's E.E.O. officer, mentioned that the east end of the Fremont Bridge falls in the Model Cities area, which is largely a minority area. He referred to the recent labor problems in the Seattle area and inquired as to the contractor's proposed use of unions as a labor source.

Mr. Murphy answered that his company has done a lot of work with unions and usually utilizes them for a labor source. He did acknowledge, however, that he had a moral and legal obligation with regard to the minority problem. He said his firm is not a member of A.G.C. or of any other similar organization. He said training of skilled workmen is not a problem with regard to shop work but that it is a problem with structural iron work in the field. His firm is presently developing their policy with regard to field training of personnel.

Mr. Ed Johnsen mentioned that there is an apprenticeship program with the unions for structural iron workers whereby they allow one apprentice for seven on-the-job journeymen. He asked if Mr. Murphy intended to do recruiting and training for this project.

Mr. Murphy replied that his company's policy with regard to field work was still being developed. He did mention that they have found in the past that this one-to-seven ratio sometimes has had to be adjusted. He said they have never hesitated to bring up young people if they show willingness to learn and work.

Mr. Ed Johnsen also said that the Fremont Bridge is going to be seen by our minority population and that we could have a shutdown if the minorities are not represented on the project. He said there is a small representation of black people on the ironworker unions now. He told Mr. Murphy that it was his responsibility to start a recruiting program to get minority apprentices lined up. He said he would have a compliance review shortly after the contractor arrives on the job site to see what their plans are.

Mr. Hardt handed Mr. Geer several copies of a "procedure plan" which had been developed for the West Fremont Interchange for handling and distribution of shop drawings to and from the consulting engineer. He asked that the contractor review this plan to determine if it would also function on the Fremont Bridge Superstructure project.

The meeting was adjourned at 12:05 p.m.

A. E. Johnson
Metropolitan Engineer

by

Edward L. Hardt

Edward L. Hardt
Assistant Metropolitan Engineer

ELH:lh

FORM S-90 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
September 18, 1969

SUBJECT: File 35107 -NC
Portland Dock Commission
Fremont Bridge Section
Stadium Freeway

To: Mr. F. B. Klaboe
Assistant State Highway Engineer

B u i l d i n g

In the process of negotiating the use restrictions with the Commission of Public Docks, a considerable amount of hours were spent by Mr. Sollis and Mr. Litchfield in discussions with the Commission of Public Docks' officials, their attorney, and the Portland Fire Marshal to determine what use restrictions were necessary to properly protect the bridge and the proper wording of those restrictions. It was necessary that we have the use restrictions worked out before the appraisers could make their appraisals on the file. The wording of the use restrictions were worked out and approved by the Dock Commission and the Bureau of Public Roads, and appraisals were made and reviewed for the sum of $35,133.

Attached is a copy of the land use restrictions for your approval before we present them to the Dock Commission for their final consideration.

Approved 9-22-69
F B Klaboe
Asst. State Hwy. Engr.

G E Rohde
G. E. ROHDE
Chief Counsel

GER:JLS;krk;hg
Attachment

cc: Mr. Frank McKinney
Mr. Jack Sollis
Mr. D. H. Moehring

orig sent to Sollis 9-22-69

NOTED
TOM EDWARDS

RECEIVED
SEP 18 1969
OFFICE OF
STATE HIGHWAY ENGINEER

LAND USE RESTRICTIONS

WHEREAS, the City of Portland, Oregon, a municipal corporation of the State of Oregon, acting by and through its The Commission of Public Docks, hereinafter referred to as "Commission," is the owner of the following described real property hereinafter referred to as "Parcel A":

A parcel of land lying in the SE¼ of Section 28, Township 1 North, Range 1 East, W.M., Multnomah County, Oregon, the said parcel being that portion of said SE¼ lying Northwesterly of the Southeasterly line, and its Northeasterly extension, of Lot 11 of River Block, WATSON'S ADDITION to the City of Portland; Northeasterly of N.W. Front Street; Southwesterly of the West Harbor line of the Willamette River; and Southeasterly of a line which is parallel to and 137.5 feet Northwesterly of the center line of the Southbound lane of the Stadium Freeway, which center line is described as follows:

Beginning at Engineer's center line Station "FB3" 343+63.50, said Station being 1075.76 feet South and 979.01 feet West of the intersection of the center line of Mississippi Avenue and North Stanton Street; thence South 42° 09' West, 2436+00 feet to Engineer's center line Station "FB3" 368+00.

Bearings used herein are based upon the Oregon Co-ordinate System, North Zone.

The parcel of land contains 33,850 square feet, more or less;

and,

WHEREAS, the STATE of OREGON, by and through its State Highway Commission, hereinafter referred to as "State," is acquiring certain real property, hereinafter referred to as "Parcel B," which abuts on the Southeasterly side of Parcel A and is described as follows:

A parcel of land lying in the SE¼ of Section 28, Township 1 North, Range 1 East, W.M., Multnomah County, Oregon; the said parcel being described as follows:

Beginning at the most Westerly corner of Lot 10 of River Block, WATSON'S ADDITION TO THE CITY OF PORTLAND, in the City of Portland; thence South 50° 27' East along the Southwesterly line of Lots 10 and 9 of said River Block, WATSON'S ADDITION, a distance of 135 feet; thence North 40° 33' East, 365 feet, more or less, to the West Harbor line of the Willamette River; thence Northwesterly along said West Harbor line to the Northeasterly extension of the Northwesterly line of said Lot 10; thence Southwesterly along said Northeasterly extension and the Northwesterly line of said Lot 10 to the place of beginning.

The parcel of land to which this description applies contains 50,750 square feet, more or less;

and

WHEREAS, State plans to construct part of the structure of the Fremont Bridge upon Parcel B; and

WHEREAS, costly damage could result to such bridge structure by the occurrence of a fire under or near said bridge structure and, therefore, Commission has agreed, for the consideration hereinafter set forth, to restrict the use of Parcel A in order to reduce such fire hazard;

NOW, THEREFORE, in consideration of the payment by State to Commission of Thirty-five Thousand One Hundred and Thirty-three Dollars ($35,133.00), receipt of which is hereby acknowledged, Commission hereby covenants and agrees that the use of Parcel A shall be subject to the following restrictions:

1. No part of Parcel A shall be used for the manufacture, storage, keeping or holding of flammable liquids and gases, combustible liquids, combustible chemicals, combustible metals, combustible plastics, or explosives of any kind. For this purpose, ammonium nitrate is regarded as an explosive.

2. No part of Parcel A shall be used for the manufacture or storage, at any one time, of combustible cargoes such as lumber products, combustible fibers, paper products, pulverized feed, feed and flour, sulphur, free-burning plastics, hazardous chemicals, in individual or combined total amounts, in excess of one carload lot.

All classes of cargo, goods and commodities except explosives and ammonium nitrate, may be moved through, over and across Parcel A, and all vehicles, including rail cars, shall have free and unrestricted access to, from and over Parcel A in connection with terminal operations. The term "explosives" shall not include small arms ammunition. Flammable liquids and gases, combustible liquids, combustible chemicals, combustible metals, combustible plastics and oxidizing materials and unstable chemicals shall be moved over and across Parcel A in a continuous movement except for unavoidable temporary delays, and such commodities

may be loaded to, or discharged from, a vessel moored adjacent to said area, but shall not be stored or transferred from one vehicle to another in said area. Combustible cargoes such as lumber products, combustible fibers, paper products, pulverized feed, feed and flour, sulphur, free-burning plastics and hazardous chemicals may be held or kept on said Parcel A when loaded on vehicles, including rail cars, for such period of time as may be necessary in the loading and unloading of a vessel; provided, however, that any such vehicle or rail car containing such materials shall not be left unattended either under or within 50 feet in any direction of the steel bridge structure measured horizontally or vertically from the nearest part of said bridge structure.

3. Commission shall not permit any hazardous or unreasonable smoke, fumes, vapor or odors to emanate from Parcel A.

4. Commission shall have the right to allow any and all vessels to moor adjacent to Parcels A and B and adjacent to the dolphins described in the separate agreement between the parties dated January 23, 1968, and to tie and secure lines to said Parcel A and to the dolphins adjacent to Parcel B for the purpose of berthing, loading and unloading vessels.

5. State shall have the right to impose on Parcel A reasonable regulations deemed necessary by State to protect against fire and any other occurrence that might be a hazard to the Fremont Bridge structure, or to its use by the traveling public, and Commission shall comply with such regulations; provided, however, that State shall not have the right to limit or interfere with the rights and usages specifically provided for and authorized in Paragraphs 2, 4, and 6 of this agreement.

6. No new buildings or other structures shall be constructed or placed on Parcel A. Commission shall have the right to use, operate, maintain and replace existing structures and facilities, including an existing crane located on said Parcel A.

7. State shall have the right to go upon Parcel A at all reasonable times in order to examine and determine the use being made of Parcel A by Commission in its operations.

8. The covenants herein contained shall run with the land, Parcel A, above described, in favor of State, its successors and assigns, as a benefit to Parcel B, for the life of the Fremont Bridge structure and any replacement thereof, and shall bind Commission, its successors and assigns, and all lessees, tenants or other persons, firms, corporations, associations, public bodies or other organizations of any kind that may use Parcel A or any part thereof.

9. Motor vehicles, including trucks not loaded with materials set out in Paragraphs 1 and 2 above, may be parked or placed on Parcel A, unattended.

10. There shall be no access between Parcel A and the Fremont Bridge.

IN WITNESS WHEREOF, the parties hereto have set their hands and affixed their seals this _____ day of _____, 19__.

THE CITY OF PORTLAND ACTING BY AND THROUGH ITS THE COMMISSION OF PUBLIC DOCKS

_____
Chairman

_____
Secretary

ATTEST:

_____
Secretary

APPROVED:

_____
Assistant State Highway Engineer

APPROVED AS TO FORM:

_____
Chief Counsel

_____
Staff Attorney

APPROVED AS TO FORM:

_____
Counsel for Commission of Public Docks

STATE OF OREGON, by and through its STATE HIGHWAY COMMISSION

By _____
Chairman

By _____
Commissioner

By _____
Commissioner

STATE OF OREGON

County of Marion

On this _____ day of _____, 19__, before me appeared Glenn L. Jackson, Fred W. Hill, and Thaddeus B. Bruno, to me personally known, who, each being duly sworn did say that he, the said Glenn L. Jackson is Chairman of the State Highway Commission of the State of Oregon, and that he, the said Fred W. Hill and he, the said Thaddeus B. Bruno is State Highway Commissioner of the State of Oregon; that the seal affixed to said instrument is the seal of the State Highway Commission, and that the said instrument is signed and sealed in behalf of said State by said Commission, and that the said Chairman and the said Commissioners acknowledge said instrument to be the free act and deed of said State, by said State Highway Commission.

IN TESTIMONY WHEREOF., I have hereunto set my hand and affixed my official seal the day and year last above written.

DEC 1 - 1969

Attachment 1

7-12-69

Interstate Estimate and Actual Cost for
Fremont Bridge and Connecting Interchanges

I-405-8(17)303
7276

(Amounts in $1,000)

Project	Obligation Date	Contract No.	1968 Interstate Estimate	Project Authorization on 9/15/1969
Superstructure Fremont Bridge 405-8(17)303	6/69	7276	$18,035	$24,055
West Fremont Interchange 405-8(20)303	5/69	6,247	$20,591	$20,868
East Fremont Interchange Unit A 405-8(22)304	7/69		$10,204	$13,262
East Fremont Interchange Unit B 405-8(23)304	7/69		$ 6,699	$10,003
East Fremont Interchange Unit C 405-8(24)304	6/69		$ 2,395	$ 2,345
			$57,924	$70,533

13,000
6,362 Not Included

September 16, 1969

NOTED
F. B. KLABOE

RECEIVED
SEP 12 1969
FOR FILING

I-405-1(17)303
7276

September 10, 1969

Mr. Sherwin L. Steinberg
Sales Manager
Carboline Company
328 Hanley Industrial Court
St. Louis, Missouri 63144

7807

Dear Mr. Steinberg:

I have your letter of September 4 concerning paint and paint specifications for the Fremont Bridge.

As of now there are two contracts in existence, both requiring the same type of paint. These are Contract No. 7214 for the West Fremont Interchange complex to Andersen-Hannan of Portland, Oregon and Contract No. 7276 for the main river crossing to Murphy Pacific Enterprises of Emeryville, California.

We have not been advised by either of the prime contractors or the steel fabricators as to who the supplier for the paint will be. There have been no changes made in the contract specifications for paint and none will be made. The supplier, whoever he may be, will be required to furnish products complying strictly with the specifications as written.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant

CAG:dh ja

carboline COMPANY

AREA CODE 314
MISSION 4-1000

CORROSION RESISTANT COATINGS
FOR MAINTENANCE • EQUIPMENT • TANK LININGS • FLOORS

328 HANLEY INDUSTRIAL COURT
ST. LOUIS, MO. 63144

September 4, 1969

Mr. Tom Edwards, Assistant State Highway Engineer
Oregon State Highway Department
Highway Building
Salem, Oregon 97310

Subject: Fremont Bridge Protective Coatings

Dear Mr. Edwards:

As you know the protective coatings specifications for the inorganic zinc primer to be used on the Fremont Bridge indicate that the material shall be a self-curing type included on the current Qualified Products List, QPL-23236, under Military Specifications MIL-P-23236 (Ships) for Type I, Class 3. In your letter of July 18 you indicated to me that the specification is open to any material supplier who can comply with these specifications.

Several recent reports from the field indicate that Mobil Zinc 7 has been selected for use by the fabricator of the main bridge and that the same product was submitted for use by the fabricator of the west interchange. To the best of our knowledge Mobil Zinc 7 is not approved under the latest QPL for MIL-P-23236, Type I, Class 3 nor has it ever been. If the above reports are true we are at a loss to understand how a product that does not meet the specification could be approved. We would very much appreciate an explanation. Thank you for your consideration.

Very truly yours,

CARBOLINE COMPANY

Sherwin L. Steinberg
Sales Manager

SLS:ep
cc: Mr. Forrest Cooper, State Highway Engineer

Merchant RD
cc Edw

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
AM SEP8 1969 PM
7,8,9,10,11,12,1,2,3,4,5,6

RECEIVED
SEP5 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
AUG 25 1969

UNITED STATES GOVERNMENT

Memorandum

I-405-8(17)303
7776

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Bureau of Public Roads
Box 300
Salem OR 97308

DATE: August 19, 1969

In reply refer to: 08-35-EC

klabon

SUBJECT: Oregon Project I-405-8(4)303
Fremont Bridge Section, Stadium Freeway
Right of Way Agreements with Portland
Terminal Railroad Company

The quitclaim deed from the State Highway Commission to the Portland Terminal Railroad Company (file #35105) and the easement from the Portland Terminal Railroad Company to the State Highway Commission (file #35106) as transmitted with Mr. Sollis' August 1, 1969 letter has been reviewed by this office and found to be satisfactory.

orig to Sollis
copy to Litchfield
8-22-69

F. B. KLABOE

RECEIVED
AUG 22 1969
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

OREGON STATE
HIGHWAY DEPARTMENT

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

August 5, 1969

Mr. D. E. Bergstrom
Traffic Engineer
City Hall
Portland, Oregon 97204

Dear Mr. Bergstrom:

We have received the copies of the agreement covering the illumination of the Fremont Bridge and the East Fremont Interchange. These have been executed by the proper City officials.

However, the accompanying copy of Ordinance 129380 which authorizes execution of the agreement speaks of the Minnesota Freeway. The Fremont Bridge and the East Fremont Interchange are actually a part of the Stadium Freeway.

Discussion with Mr. R. F. Hertig, Chief Deputy City Attorney, indicates that Council action to amend the ordinance would be necessary if elsewhere in the agreement the term "Stadium Freeway" is used. It was also indicated that it was doubtful that such amendment could be accomplished prior to award of the contract.

In lieu of amendment, we have revised the agreements to read "...on the Fremont Bridge and the East Fremont Interchange Section of the Minnesota Freeway...", and their execution in this form will be completed.

It is the feeling of Mr. Hertig and of our Legal Division that for the sake of the record we clarify the fact that the intent of the agreements is to cover the illumination of the Fremont Bridge and the East Fremont Interchange Section of the Stadium Freeway.

RECEIVED
AUG 6 1969
BUREAU OF
TRAFFIC ENGINEERING

It is requested that the Mayor sign a copy of this letter as approving this intent and that it be returned to this office for our files.

Your cooperation in this matter will be appreciated.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

APPROVED

MAYOR

RECEIVED
AUG 22 1969
FOR FILING

OREGON STATE HIGHWAY DEPARTMENT

Lang
Hoy
Mount Bacon
E. Fren Lt

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

August 5, 1969

Oregon State Highway Commission

4C

Gentlemen:

An agreement has been executed with the City of Portland for the installation of luminaire units on the Fremont Bridge and the East Fremont Interchange in that city.

By the terms of the agreement, the State is to install the luminaire units and care for future maintenance. The City is to pay the power costs. The installation, estimated to cost $330,000, is incorporated in overall construction of the bridge and its approaches.

Your approval and authorization for the Secretary to sign this agreement is recommended.

This matter will be on the agenda for your consideration at the August 19 meeting.

Very truly yours,

Original signed
Forrest Cooper

Forrest Cooper
State Highway Engineer

cc: Floyd Query
R. L. Porter
Tom Edwards
V. D. Wolfe
V. E. Skoog
F. B. Crandall
E. S. Hunter
J. J. Gix
H. S. Cox
A. E. Johnson

RECEIVED
AUG 4 - 1969
FOR FILING

I-405-8(17)303

7276

August 4, 1969

Murphy Pacific Enterprises
P. O. Box 4395
Bayshore Station
Oakland, California 94623

Gentlemen:

On July 11 we wrote to you stating that the workday count on Contract No. 7276 would begin on July 23.

Subsequent to our letter, the President declared a national holiday on Monday, July 21. Our Chief Counsel has determined this to be a legal holiday within the meaning of Section 6-7 of the Special Provisions in the contract.

Therefore, the calendar day count on this contract will begin July 24, 1969.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

cc
Enclosures

bc: Frank Morgan
D. J. Barbee
I. D. Merchant
William Gethel (SAIF)
A. E. Johnson
Robert Cunningham

RECEIVED
JUL 30 1969

FORM FHWA-121 (12-67)

UNITED STATES GOVERNMENT

I-405-8(16)303
7276

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Bureau of Public Roads
Box 300
Salem OR 97308

DATE: July 23, 1969

In reply refer to: 08-35-DA

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon
Attention: T. W. Litchfield

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(16)303
Fremont Bridge Section
Stadium Freeway
Utility Encroachment

A recent inspection of subject project revealed an 8-inch fire line (water) crossing the Interstate right of way vicinity of Station FB 3 349+25. There is no record of a permit covering this utility encroachment in this office.

A new service connection to the water main located along N. River Street could be provided immediately westerly of the Interstate right of way, thereby eliminating this unapproved utility encroachment. Please make necessary arrangements for its relocation.

Orig to Litchfield 7.28.69

HOLD
F.B. KLABOE

RECEIVED
JUL 28 1969
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
JUL 18 1969
FOR FILING

I-405-8(17)303
7776

July 18, 1969

7660

Mr. Sherwin L. Steinberg
Sales Manager
Carboline Company
328 Hanley Industrial Court
St. Louis, Missouri 63144

Dear Sir:

I have your letter of July 7 concerning possible use of some of your products on the Fremont Bridge.

For your information, the general contract for the Fremont Bridge superstructure has just recently been awarded to Murphy Pacific Enterprises, 4300 Eastshore Highway, Emeryville, California 94608.

All paint requirements are a part of the general contract. The specification is open to any material supplier who can comply with the specifications.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant

CAG:cs/TE:ja

carboline COMPANY

AREA CODE 314
MISSION 4-1000

CORROSION RESISTANT COATINGS
FOR MAINTENANCE • EQUIPMENT • TANK LININGS • FLOORS

328 HANLEY INDUSTRIAL COURT
ST. LOUIS, MO. 63144

9064

July 7, 1969

REFERRED TO
Edwards
BY DEPUTY STATE HIGHWAY ENGINEER

Mr. Forest Cooper, Highway Engineer
Highway Department
State of Oregon
Salem, Oregon

Subject: Protective Coatings for Fremont Bridge

Dear Mr. Cooper:

This letter is intended to acquaint you with the Carboline Company and to make known our interest in supplying protective coatings for use on the Fremont Bridge. As you may know, the coatings specifications call for an inorganic zinc coating of the self-curing type, included in the current Qualified Products List, QPL-23236, under Military Specifications MIL-P-23236 (Ships) for Type I, Class 1. In addition, the vinyl finish coat shall be manufactured by the supplier of the inorganic zinc primer. The respective Carboline products are Carbo Zinc 11 and Polyclad 936-1.

To our knowledge Carbo Zinc 11 is the most widely used and proven solvent-based, self-curing inorganic zinc in the world, with over ten years and 300,000,000 coated square feet of experience. Carbo Zinc 11 has performed in an excellent manner in extremely corrosive environments throughout the world and we would be pleased to supply case histories on request. For example, Carbo Zinc 11 was used as the prime coat on 60,000 tons of structural steel in the largest building in the world, the Vertical Assembly Building at Cape Kennedy Space Center, Cape Kennedy, Florida.

Some of the bridges in the U. S. that Carbo Zinc 11 has been used on include the following:

1. Louisiana State Highway Department, Houma, Louisiana, Applied 1962.

2. U. S. Marine Corps Reservation, Onslow Beach Bridge, Camp LeJeune, North Carolina 1964.

3. Illinois State Highway Department, Poplar Street Bridge, St. Louis, Missouri Carbo Zinc 11 Plus Carbomastic 14 1967.

carboline
COMPANY

4. Texas State Highway Department, Lake Travis Bridge, Austin, Texas, 1967.

5. New Hampshire State Highway Department, Merrimack River Bridge, Carbo Zinc 11 plus Carboline 1294, 1968.

6. City of Toledo, Ohio, Carbo Zinc 11 plus Carboline 1294 1968.

7. North Carolina State Highway Department, Oregon Inlet Bridge, Carbo Zinc 11 plus Carbomastic 14 1968.

8. Washington State Highway Department, Northern Cross Bridge 1968.

9. Washington State Highway Department, Snohomish Bridge 1968/1969.

10. Washington State Highway Department, Central Ferry Bridge 1969.

The Poplar Street Bridge at St. Louis should be of particular interest. Carbo Zinc 11 was thoroughly tested by the Illinois State Highway Department, selected, and applied to the steel deck surface of this orthotropic span 2½ years ago. To date, performance of our coating has been excellent.

Thank you for taking the time to read this letter. We would sincerely appreciate the opportunity to bid on the protective coatings requirements on the Fremont Bridge.

Very truly yours,

CARBOLINE COMPANY

Sherwin L. Steinberg

Sherwin L. Steinberg
Sales Manager

SLS:ep
cc: Mr. Glen L. Jackson
Chairman Highway Commission
State of Oregon
Medford, Oregon
Chemical Proof Corporation
Mr. Bill Aickin, representing Carboline Company
625 South Alaska Street
Seattle, Washington 98108

RECEIVED
JUL 9 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUL 7 - 1969

FOR FILING
I-405-8(17)303
7276

July 7, 1969

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street N.E.
Salem, Oregon

Dear Sir:

Confirmation of your tentative concurrence as of June 30, 1969 is requested in the award of contract for the Fremont Bridge (Superstructure) Section, Project No. I-405-8(17)303.

The contractor receiving the award is Murphy Pacific Corp. and Murphy Pacific Marine Salvage Company of Oakland, California in the amount of $21,833,293.00, with Contract No. 7276 assigned. This bid was received on June 26, 1969, and awarded July 3, 1969.

All right of way or rights of entry have been acquired.

The low bidder completed the Anti-Collusion Statement included in our proposal, as required by PPM 21-6.1, and it will be retained in a permanent project file.

All rights of access, including utilities, to or from abutting property are either (1) denied by law, (2) have been acquired, or (3) have been acquired in condemnation proceedings which have been commenced and will be prosecuted to completion. All necessary arrangements have been made for all utility and railroad work not included as part of the construction contract to be undertaken and completed without conflicting or delaying the State contractor's operations.

In compliance with Par. 6b of PPM 21-6.3, we certify that all prospective bidders did acknowledge receipt of the addendums to the plans and proposal for this project before the bid opening date.

Very truly yours,

Fermont Cooper
State Highway Engineer

By

L. H. Young
Program and Planning Engineer

Bureau of Public Roads' Endorsement

Dated

I concur in the award.

R. E. Simpson
Division Engineer

RECEIVED
JUL 7 - 1969
FOR FILING

I-405-8(17)303
7276

July 3, 1969

Murphy Pacific Enterprises
4300 Eastshore Highway
Emeryville, California 94608

Gentlemen:

The State Highway Commission today awarded to you State Highway Contract No. 7276 for a superstructure on the Fremont Bridge Section of the Stadium Freeway in Portland in Multnomah County.

This award was based on your bid of $21,833,293 which was the low bid submitted to the Commission on June 26 for this project.

Contract forms will be sent to you for execution within the next few days.

Very truly yours,

Floyd Quarry, Secretary
OREGON STATE HIGHWAY COMMISSION

cc

bcc: D. J. Barbee
F. D. Morgan
I. D. Merchant
William Gaibel (SAIF)

RECEIVED
JUL 7 - 1969
FOR FILING

OREGON STATE HIGHWAY DEPARTMENT

I-405-8(17)303
7276

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

July 3, 1969

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street, N.E.
Salem, Oregon 97301

RE: Approved Plans
Fremont Bridge Superstructure
Stadium Freeway
Multnomah County
Project No. I-405-8(17)303

Dear Sir:

Attached you will find a copy of the Union Pacific Railroad Company's letter dated July 1, 1969 approving the construction plans for the above-captioned project.

You will note that the Railroad asks for two minor changes to be made in the specifications. Since we have opened bids for this project, the specifications cannot be changed, but the contractor will be advised by our Resident Engineer that the Union Pacific's tracks in the vicinity of Pier 2E and 1E must be protected from falling objects and that the contractor will consult the Union Pacific to determine what will be required for proper protection of their facilities.

If compliance with this request results in additional cost to the contractor, it will be handled by Price Agreement or Extra Work Order.

Very truly yours,

F. D. Morgan
Construction Engineer

By ORIGINAL SIGNED BY
T. W. LITCHFIELD

NOTED
TOM EDWARDS

T. W. Litchfield
Utilities Liaison Engineer

TWL:fw
Enc.
cc: Tom Edwards
I. D. Merchant
L. H. Young
D. J. Barbee
A. E. Johnson
Robert Cunningham
Jack Hesla

RECEIVED
JUL 7 1969
OFFICE OF
STATE HIGHWAY ENGINEER

UNION PACIFIC RAILROAD COMPANY

TRANSPORTATION DIVISION
DEPARTMENT OF OPERATION

W. G. JOHNSON
SUPERINTENDENT
OREGON DIVISION

5525 NO. LARRABEE AVE.
PORTLAND, OREGON 97227

JULY 1, 1969

File Ref. D 9010 - 32 - 17

Routing

Morgan, Docker, Walker, Boehme, Gallagher, Peace, Swan, Glenn, Litchfield, Stein

RECEIVED
JUL 2 1969
CONSTRUCTION DIVISION

Mr. F. D. Morgan,
Construction Engineer
Oregon State Highway Department
Salem, Oregon 97310

Atten: Mr. T. W. Litchfield,
Utilities Liaison Engineer

Dear Sir:

Fremont Bridge (Superstructure)
Stadium Freeway Section, Multnomah County

Referring to your letter of April 29, 1969 transmitting Construction Plans and Special Provisions to cover the captioned section of highway construction in Portland, Oregon:

For your information the plans have been reviewed and approved by Mr. J. M. Bates on behalf of the Railroad's Chief Engineer. Mr. Bates has noted his approval on one set of the plans without change, now attached for your record.

It is requested, however, that the State modify Section 7-28 Protection of Railroad in its Special Provisions as follows:

> "The contractor is advised that he must protect the railroad tracks and facilities from falling objects at all times between Pier 2W and Pier 1W and vicinity Pier 2E and Pier 1E.
>
> The contractor shall contact the representatives of the Union Pacific Railroad Company, Portland Terminal Railroad Co. and the Spokane, Portland and Seattle Railway Co. to determine what will be required by them for proper protection of their facilities."
>
> (Changes requested are shown underlined.)

#2
Mr. F. D. Morgan July 1, 1969

These changes are requested inasmuch as our Company has trackage in N. River and N. Loring Streets on the easterly bank of the Willamette River which will be affected by the bridge construction.

It is also suggested that you advise State's contractors of the Railroad's current pay rates as follows:

Engineer-Inspector	$849 per month
Section Foreman	$3.48 - $3.57 per hour
" Laborer	$2.85 - $2.89 " "

These base pay rates were effective January 1, 1969. To all direct costs the additional charges for vacation allowances, etc., may be considered collectively as approximately 34% of the direct labor cost.

Yours very truly,

W. D. Johnson/jat

enc.

Copies to: RE Simpson
Tom Edwards
ID Merchant - w/ approved plans
AE Johnson
LH Young
DJ Barbee
Robt. Cunningham
Jack Hesla

7-2-69
E

I-405-8(17)303
1976

OREGON STATE HIGHWAY COMMISSION

PREADVERTISING ANNOUNCEMENT

June 26, 1969

The Oregon State Highway Commission intends to formally advertise the following project on the 5th day of June, 1969. Sealed bids will be received in Room 122, State Highway Building, Salem, Oregon at 9 a.m., Thursday, June 26, 1969.

MULTNOMAH COUNTY: Fremont Bridge Section of Stadium Freeway in Portland. Federal-Aid Interstate Project No. I-405-8(17)303. Super structure. Req. approx. 3,910 cu. yds. Cl. A conc.; 1,010,000 lbs. reinf.; 14,646,000 lbs. A 36, 2,078,000 lbs. A 441, 6,416,000 lbs. A 514 and 14,310,000 lbs. A 588 struct. steel; 788,000 lbs. casting and forgings; 8,639 lin. ft. metal parapet railing; 2,400 tons epoxy asph. pavement; bridge electrical work; 6,000 lbs. aluminum in sign trusses; 362 sq. ft. signs. Completion time 860 calendar days. Req. R. R. Insurance.

Federal requirements applicable to this project accompany the special provisions for the project and must be complied with.

Plans and specifications may now be inspected at the State Highway Bldg. in Salem and at the AGC offices in Portland, Eugene, Seattle, Spokane, and Boise and at the Builders Exchange Cooperative, Portland.

Plans may be purchased at this time in the Salem office upon payment of $5 per set. Prequalification of bidders will be required.

The right is reserved to reject any and all proposals or to accept the proposal deemed best for the State of Oregon.

OREGON STATE HIGHWAY COMMISSION

Glenn L. Jackson, Chairman
Fred W. Hill, Commissioner
Thaddeus B. Bruno, Commissioner

Forrest Cooper
State Highway Engineer

ATTEST:
Floyd Query, Secretary
4-28-69

DATE OF OPENING BIDS June 26, 1969
NO. OF BIDS RECEIVED 2

OREGON STATE HIGHWAY DEPARTM

ITEMIZED BIDS RECEIVED

SECTION Fremont Bridge
HIGHWAY Stadium Freeway
COUNTY Multnomah
TYPE OF WORK Superstructure

NO.	ITEM	QUANTITY	UNIT	Murphy Pacific Corp. & Murphy Pac. Marine Salv. Co. Oakland, California UNIT BID	AMOUNT	Willamette-Western Corp. & Donald M. Drake Co. Portland UNIT BID
1	TEMPORARY PROTECTION AND DIRECT TRAFFIC	1.000	LUMP SUM	8000.00	8,000.00	20000.00
2	CLASS A CONCRETE	1.000	LUMP SUM	334528.00	334,528.00	460000.00
3	REINFORCEMENT	1.000	LUMP SUM	130000.00	130,000.00	110000.00
4	A 36 STRUCTURAL STEEL	1.000	LUMP SUM	6850000.00	6,850,000.00	6850000.00
5	A 441 STRUCTURAL STEEL	1.000	LUMP SUM	835000.00	835,000.00	1000000.00
6	A 514 STRUCTURAL STEEL	1.000	LUMP SUM	4250000.00	4,250,000.00	3600000.00
7	A 588 STRUCTURAL STEEL	1.000	LUMP SUM	7500000.00	7,500,000.00	8000000.00
8	MISCELLANEOUS METAL	1.000	LUMP SUM	210000.00	210,000.00	180000.00
9	CASTINGS AND FORGINGS	1.000	LUMP SUM	1000000.00	1,000,000.00	1855000.00
10	SUSPENDER STRAND	1.000	LUMP SUM	230000.00	230,000.00	187000.00
11	METAL PARAPET RAILING	8,639.000	LIN FT	7.00	60,473.00	7.00
12	EPOXY ASPHALT PAVEMENT	2,400.000	TONS	140.00	336,000.00	140.00
13	ELECTRICAL WORK	1.000	LUMP SUM	70000.00	70,000.00	75000.00
14	ALUMINUM SIGN TRUSSES	1.000	LUMP SUM	14000.00	14,000.00	15000.00
15	TYPE A SIGNS IN PLACE	624.000	SQ FT	8.00	4,992.00	10.00
16	TYPE C F G AND M SIGNS IN PLACE	50.000	SQ FT	6.00	300.00	6.00
	TOTAL BID				21,833,293.00	22,756,013.00

LOW BID

I-405-8(17)303 1276 6-69

OREGON STATE HIGHWAY DEPARTMENT

F.A.P. NO. I-405-8(17)303

SHEET NO. 1 OF 1 SHEETS PAGE 1

ITEMIZED BIDS RECEIVED

Murphy Pacific Corp. & Murphy Pac. Marine Salv. Co. Oakland, California		Willamette-Western Corp. & Donald M. Drake Co. Portland				
UNIT BID	AMOUNT	UNIT BID	UNIT BID	UNIT BID	UNIT BID	UNIT BID
8000.00	8,000.00	20000.00				
334528.00	334,528.00	460000.00				
130000.00	130,000.00	110000.00				
850000.00	6,850,000.00	6850000.00				
835000.00	835,000.00	1000000.00				
250000.00	4,250,000.00	3600000.00				
500000.00	7,500,000.00	8000000.00				
210000.00	210,000.00	180000.00				
000000.00	1,000,000.00	1855000.00				
230000.00	230,000.00	187000.00				
7.00	60,473.00	7.00				
140.00	336,000.00	140.00				
70000.00	70,000.00	75000.00				
14000.00	14,000.00	15000.00				
8.00	4,992.00	10.00				
6.00	300.00	6.00				
	21,833,293.00	22,756,013.00				

LOW BID

RECEIVED
JUN 10 1969

FOR FILING
I-IIDS-8(17)303
7276

June 9, 1969

City of Portland
Bureau of Fire
55 S. W. Ash Street
Portland, Oregon 97204

Attention: James B. Rispelle, Chief

Gentlemen:

Your letter of May 15 to A. E. Johnson, Metropolitan Engineer, regarding equipment to provide a supply of water to elevated bridge structures has been received in this office.

A study is now being made to see how best to provide the dry standpipes requested. Because of the type of construction involved in the east and west Fremont approaches, the installation of standpipes is not the easiest installation. At such time as our plans are finalized, we will ask that you review the proposed locations and installations.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

cc: Forrest Cooper
R. L. Porter
F. B. Klabee
Victor D. Wolfe
I. B. Marchant
A. E. Johnson

IBM:jf sr

BUREAU OF FIRE

Department of Public Safety

CITY OF PORTLAND, OREGON

Stanley W. Earl
COMMISSIONER

James H. Riopelle
CHIEF
55 S. W. Ash St., 97204
Phone 226-6141
Ext. 461

May 15, 1969

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
AM MAY 2 2 PM
7,8,9,10,11,12,1,2,3,4,5,6

Mr. A. E. Johnson, Metropolitan Engineer
Oregon State Highway Department
5821 N. E. Glisan Street
Portland, Oregon 97213

Dear Mr. Johnson:

FIRE DEPARTMENT STANDPIPES ON ELEVATED ROAD AND BRIDGE STRUCTURES

A firefighting water supply is essential to the suppression of fire including over the road accidents involving substantial quantities of flammable liquids. Normally, if a fire ladder truck and fire pumper can reach the base of a structure, water can be delivered to the structure above, up to and including the 70 foot elevation.

A system of wet mains and hydrants on elevated structures is impractical because of freezing in this climate. A system of dry standpipes which the fire department can charge when the need arises appears to be the most practical solution to this problem. All of the necessary fittings, gates, and related appliances are standard in the trade.

Dry standpipes have been successfully erected on the Marquam Bridge to help protect these high roadways. It is our recommendation and request that a similar system of standpipes be installed on the proposed Fremont Bridge and its approaches. We would recommend the following guidelines or criteria for such standpipe installations:

1. Provide dry standpipe service to roadway structures more than 70 feet above ground level.

2. For single deck or single level roadways, provide a 4-inch standpipe with a 2-way, 2 1/2-inch, siamese inlet located not less than 2 feet or more than 4 feet above the ground, and two 2 1/2-inch gated outlets at the road level, accessible for firemen's use.

3. On multi-level elevated road structures, the standpipes should be 6 inches in diameter with a 3-way, 2 1/2-inch fire department siamese connection located not less than 2 feet or more than 4 feet above ground level with two 2 1/2-inch gated outlets accessible to firemen at each level. In such multi-level structures, the standpipe may be reduced in size to 4 inches to serve the topmost level.

METROPOLITAN ENGINEER
RECEIVED
MAY 16 1969
Mo AAE AME MOE MDE MTE

4. On multi-level structures, standpipes should be located where they can service two or more levels of roadway.

5. The interval between vertical standpipes on elevated structures should be not more than 1,200 feet.

6. If practical, horizontal feeders should be tapped into the vertical standpipe to serve adjacent roadways.

7. Standpipes should be corrosion resistant, and we would recommend that they be fabricated of galvanized iron pipe.

8. All fire department connections should be equipped with American National Standard fire hose threads.

9. All valves should be gate valves (not globe type) to assure a straight efficient waterway.

A preliminary survey and review of the proposed structures on the west side indicates that standpipes should be provided at:

1. The west side "V" pier;

2. 15th and N. W. Savier;

3. 18th and N. W. Savier;

4. 15th and N. W. Overton.

A preliminary survey and review of the proposed structures on the east side indicates that standpipes should be provided at:

1. The east side "V" pier;

2. N. Larrabee and Knott Street;

3. N. Mississippi and Stanton Streets.

We shall be pleased to review these suggested standpipe locations with your highway engineers. Our suggested locations may not be practical for reasons not known to us.

May I offer another fire protection observation for your consideration and information? Highway accidents with flammable liquids carriers generally result in flammable liquids spills involving from 3,000 to 6,000 gallons of fuel. As likely as not, they result in fires. The spilled liquids usually follow grade into the gutters.

Any downspouts from the leads or the gutters may be expected to conduct flammable liquids to grade. If these conductors discharge onto or in the vicinity of combustible structures, you may expect an extension of the fire from the roadway above. Such gutters, drain pipes, etc., should never discharge on or immediately under unprotected steel structural members of the bridge or roadway.

Very truly yours,

James H. Riopelle

JAMES H. RIOPELLE
Chief, Bureau of Fire

JHR/mjp

cc: Commissioner Stanley W. Earl
Donald Bergstrom

6-5-69

RECEIVED JUN 1 1969 DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION BUREAU OF PUBLIC ROADS

PROJECT: I-405-8(17)303

SECTION: FREMONT BRIDGE

WORK : SUPERSTRUCTURE

COUNTY : MULTNOMAH

LETTER OF APPROVAL AND/OR AUTHORIZATION

TO: MR. FORREST COOPER
STATE HIGHWAY ENGINEER
SALEM, OREGON

I-405-8(17)303 Klaboe
7276

FROM: R. E. SIMPSON, DIVISION ENGINEER
SALEM, OREGON

DATE PS&E APPROVED	DATE AUTHORIZED
APRIL 30, 1969	JUNE 4, 1969

YOU ARE AUTHORIZED TO PROCEED WITH THE WORK CHECKED BELOW:

- (X) CONSTRUCTION - ADVERTISE FOR BIDS.
- ( ) UTILITY ADJUSTMENT.
- ( ) RIGHT OF WAY.
- ( ) RIGHT OF WAY INCIDENTALS AND RELOCATION PAYMENTS.
- (X) OTHER (SPECIFY). AFTER AWARD CONCURRANCE YOU ARE AUTHORIZED TO PROCEED WITH CONTRACTOR'S FLAGGING IN AMOUNT OF $30,000.00 AND RAILROAD PROTECTIVE SERVICES IN AMOUNT OF $4,800.00 AS SHOWN IN YOUR ESTIMATE.

REMARKS AND LIMITS OF AUTHORITY:

MR. YOUNG'S JUNE 2, 1969 REQUEST AND CERTIFYING STATEMENTS ARE ACCEPTED.

PS&E DOCUMENTS FOR THE SUBJECT PROJECT WERE APPROVED ON APRIL 30, 1969.

A SIGNED COPY OF THE TITLE SHEET IS RETURNED HEREWITH.

6-11-69

NOTED
F. B. KLABOE

RECEIVED JUN 10 1969 OFFICE OF STATE HIGHWAY ENGINEER

OFFICE USE

Yours w/enc.

DATE	SIGNATURE OF APPROVING OFFICIAL	TITLE
6-5-69	R. E SIMPSON	DIVISION ENGINEER

RECEIVED
JUN 5 - 1969
FOR FILING

OREGON STATE HIGHWAY DEPARTMENT

I-405-8(17)303
7276

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

June 4, 1969

Daily Journal of Commerce
83 Columbia Street
Seattle, Washington 98104

Gentlemen:

Attached is a copy of the State Highway Commission's Notice to Contractors for the superstructure on the Fremont Bridge section of the Stadium Freeway in Portland on which bids are to be received on June 26, 1969.

Please run this as a paid advertisement in your publication issue of June 9, 1969.

Your invoice in duplicate, with one tear sheet for each insertion date, should be mailed to my attention.

Very truly yours,

ORIGINAL SIGNED
FLOYD QUERY
Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

Attachment

cc Forrest Cooper
R. L. Porter
Tom Edwards
L. P. Shaw
F. B. Klaboe
V. D. Wolfe
D. J. Barbee
L. H. Young
I. D. Merchant
R. E. Simpson - BPR
Gordon Winchcomb

RECEIVED
JUN 4 1969
OFFICE OF
STATE HIGHWAY ENGINEER

Same letter sent to those on the attached list.

NOTED
FORREST COOPER

Pacific Builder & Engineer
1945 Yale Place North
Seattle, Washington 98109

Daily Pacific Builder
465 10th Street
San Francisco, California 94118

Daily Construction Service
P. O. Box 3019
San Francisco, California 94119

AIR MAIL
Daily Journal
1217 Welcome Street
Denver, Colorado

AIR MAIL
Mid-West Contractor
P. O. Box 766
Kansas City, Missouri 64141

AIR MAIL
Dodge Construction News
1040 Merchandise Mart
Chicago, Illinois 60654

Daily Construction Service
448 S. Hill Street
Los Angeles, California 90013

~~ORE~~ ~~N STATE HIGHWAY COMMISSION~~

NOTICE TO CONTRACTORS

~~June 26, 1969~~

Sealed bids on the following project will be opened by the State Highway Commission in Room 122, State Highway Building, Salem, Oregon, at 9 a.m., Thursday, June 26, 1969. Award will be made within a few days after bids are opened.

(1) MULTNOMAH COUNTY: Fremont Bridge Section of Stadium Freeway in Portland. Federal-Aid Interstate Project No. I-405-8(17)303. Super structure. Req. approx. 3,910 cu. yds. Cl. A conc.; 1,010,000 lbs. reinf.; 14,646,000 lbs. A 36 2,078,000 lbs. A 441, 6,416,000 lbs. A 514 and 14,310,000 lbs. A 588 struct. steel; 788,000 lbs. casting and forgings; 8,639 lin. ft. metal parapet railing; 2,400 tons epoxy asph. pavement; bridge electrical work; 6,000 lbs. aluminum in sign trusses; 362 sq. ft. signs. Completion time 860 calendar days. Req. R.R. Insurance.

Federal and State requirements concerning minimum hourly wage rates, hours of employment, overtime, etc., on Federal-aid and State Projects accompany the special provisions for each project and must be complied with.

In compliance with the Civil Rights Act of 1964, the State Highway Department hereby notifies all bidders that each contract will be awarded to the lowest responsible bidder without discrimination because of race, color, religion, sex, or national origin.

Plans and specifications may be inspected at the State Highway Building in Salem and at the AGC offices in Portland, Eugene, Seattle, Spokane, and Boise and at the Builders Exchange Cooperative, Portland.

Plans may be purchased at the Salem office upon payment of $5 per set. Prequalification of bidders will be required.

The right is reserved to reject any and all proposals or to accept the proposal deemed best for the State of Oregon.

OREGON STATE HIGHWAY COMMISSION
Floyd Query, Secretary
~~Glenn L. Jackson, Chairman~~
~~Fred W. Hill, Commissioner~~
~~Thaddeus B. Bruno, Commissioner~~

~~Forrest Cooper~~
~~State Highway Engineer~~

~~ATTEST:~~
~~Floyd Query, Secretary~~
~~6-2-69~~

RECEIVED
MAY 28 1969
FISH
COMMISSION

STATE OF OREGON
FISH COMMISSION

OFFICE OF THE DIRECTOR

I 4C 5-8(17)303
7276

307 STATE OFFICE BLDG. • 1400 S.W. 5th AVE. • PORTLAND, OREGON • 97201

TOM McCALL
GOVERNOR

COMMISSIONERS
EDW. G. HUFFSCHMIDT, Chairman
McKEE A. SMITH, Vice Chairman
JOSEPH I. EOFF, Member

ROBERT W. SCHONING
State Fisheries Director

May 26, 1969

cc's sent 5-27-69

F.B. Klaboe
F.D. Morgan
L.H. Young
G.C. Wills
F.E. Terpin (3)
T.C. Roake (3)
A.E. Johnson (2)
L.W. Rulien (2)
R.D. Asburry (2)

Larbee
Hall
A. Olson
Sample
Terpin
Swenson
Trout
Wills
Heckleman
Scott
R. Olson
Carstensen

RECEIVED
MAY 26 1969
DESIGN
DIVISION

Mr. Forrest Cooper
State Highway Engineer
Oregon State Highway Department
Highway Building
Salem, Oregon 97310

Attention Frank Hall

Dear Mr. Cooper:

The following title project transmittal to us by your letter dated May 19 has been examined.

Fremont Bridge Section, Stadium Freeway Hwy., Mult. Co.,

Nyberg Road Interchange Section, Pacific Hwy., Wash. Co.,

Ward Drive - Silverton Road Section FAS 741, Marion Co.

We anticipated no fishery conflicts with the above projects; thus they are approved.

The Necanicum Jct. project has been referred to our field office for further investigations. Our reply to this section will be made in the near future.

Sincerely,

Burt Carnegie

BURT CARNEGIE
HYDRAULICS ENGINEER

cc Oregon Game Commission

RECEIVED
MAY 27 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAY 26 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAY 28 69

GAME COMMISSION

I-405-8(17)303

OFFICE OF THE DIRECTOR

7276

P. O. BOX 3503 • 1634 S.W. ALDER ST. • PORTLAND, OREGON • 97208 • Ph. 222-9611

TOM McCALL
GOVERNOR

COMMISSIONERS
GEORGE L. HIBBARD, Chairman
J. PAT METKE, Vice Chairman
JOHN P. AMACHER, Member
JOSEPH W. SMITH, Member
JAMES W. WHITTAKER, Member

JOHN W. McKEAN
State Game Director

May 23, 1969

cc's sent 5-27-69

F.B. Klaboe/
F.D. Morgan
L.H. Young
G.C. Wills
F.E. Terpin (11)
T.C. Roake (11)
A.E. Johnson (4)
L.W. Rulien (6)
R.D. Asburry (8)
C.T. Keasey (2)
A.F. Parson (2)

State Highway Engineer
State Highway Department
Highway Building
Salem, Oregon 97310

Attention: Mr. Frank L. Hall

Dear Sir:

We have reviewed the project plan title sheets sent with your letter of May 19, 1969.

The projects are all approved as there will be no conflict with wildlife resources. The approved projects are listed below.

1. Fremont Bridge Section
   Stadium Freeway, Multnomah County

2. Nyberg Road Interchange Section
   Pacific Highway, Washington County

3. Fountain Slide Section
   Columbia River Highway, Hood River County

4. Kittridge Avenue (Portland) Channelization Section
   Columbia River Highway, Multnomah County

5. Division Street-Hilda Street (Oregon City) Section
   Cascade Highway, Clackamas County

6. Columbia River Highway-Old Portland Road Section
   FAS 574 (Gable Road), Columbia County

7. Ward Drive-Silverton Road Section
   FAS 741 (Lancaster Drive), Marion County

8. Crater Lake Highway-South Fork Reese Creek Section
   FAS 15-101, Jackson County

9. Powder River (McDougal) Lane Section
   FAS 506, Baker County

10. Murder Creek Section
    Pacific Highway, Linn County

11. Saddle Mountain Junction-Little North Fork Nehalem River
    Section Sunset Highway, Clatsop County.

Regarding the final project listed, "Saddle Mountain Junction, Little North Fork Nehalem River Section," passage for fish should be maintained and precautions should be taken against siltation.

Very truly yours,

JOHN W. McKEAN
DIRECTOR

By R. O. Koski

R. O. Koski
Chief of Liberations

ROK:js

cc: Dir. OFC

RECEIVED
MAY 27 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAY 27 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAY 15 1969
FOR FILING

I-405-8(17)303
" 7276"

May 14, 1969

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon

Re: Signing, Superstructure
Fremont Bridge Section
Stadium Freeway Highway
Project No. I-405-8(17)303

Dear Sir:

There has been considerable discussion between representatives of your office and representatives of this office concerning the placement of route shields for Signs 4 and 5 on the upper deck of the above structure.

It is our plan to incorporate these route shields in the body of the signs rather than installing them above the signs as shown on the current plans. It is planned that this change will be made after the contract is let.

This is a very minor item which actually will result in a credit to the contract. It was not believed desirable to revise the plans and send out revised plans and a revision letter to prospective bidders prior to the opening of the bids.

I trust that this arrangement will be satisfactory.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
F. B. Crandall
Ivan Merchant
L. H. Young

VPJ:ji ja

RECEIVED
U. MAY 6 1969

FILED
I-405-1(17)303
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem Office
May 6, 1969

SUBJECT: Completion Time-
Fremont Bridge Complex

To: MEMORANDUM TO FILE:

The contract for the West Fremont Interchange Project was awarded April 29, 1969. Completion time for the project is 850 calendar days, making the completion date September 6, 1971.

The specifications for the Fremont Superstructure Project require completion in 860 calendar days with a bid opening scheduled for June 26, 1969. Assuming a satisfactory bid is received and an award of contract is made by July 1, 1969, the completion time would be November 17, 1971.

The East Fremont Interchange Project is presently scheduled for bid opening August 21, 1969. To complete this project not later than the specified completion date of the superstructure contract, the completion time for this project should be not more than 800 calendar days.

To complete the entire Fremont complex, another contract must be let for construction of the West end of the West Fremont Interchange between N. W. 19th Avenue and N. W. 21st Avenue with connections to N. W. 21st Avenue.

C. G. SWENSON
Specifications Engineer

CGS/bdr
cc: F. B. Klaboe
D. J. Barbee

RECEIVED
MAY 7 1969
OFFICE OF
STATE HIGHWAY ENGINEER

		Cal. Days
WEST FREMONT		
Start Workday Count	May 9, 1969	
		236
	January 1, 1970	
		365
	January 1, 1971	
		249
	September 6, 1971	
		850
FREMONT SUPERSTRUCTURE		
Assumed Start Workday Count	July 11,1969	
		174
	January 1, 1970	
		365
	January 1, 1971	
		321
	November 17, 1971	
		860
EAST FREMONT		
Assumed Start Workday Count	September 8, 1969	
		114
	January 1, 1970	
		365
	January 1, 1971	
		321
	November 17, 1971	
		800

I-405-X(17)303
7276

OREGON STATE HIGHWAY DEPARTMENT

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

May 1, 1969

Daily Journal of Commerce
83 Columbia Street
Seattle, Washington 98104

Gentlemen:

Attached is a copy of the State Highway Commission's "Preadvertising Announcement" for super structure on the Fremont Bridge Section of the Stadium Freeway on which bids are to be received by the Commission on June 26, 1969.

Please run this as a paid advertisement in the first issue of publication after receipt of this notice.

Your invoice in duplicate, with one tear sheet for each insertion date, should be mailed to my attention.

Very truly yours,

ORIGINAL SIGNED
FLOYD QUERY

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

Attachment

cc Forrest Cooper
R. L. Porter
Tom Edwards
Lloyd P. Shaw
F. B. Klaboe
Victor D. Wolfe
D. J. Barbee
L. H. Young
Ivan Merchant
R. E. Simpson - BPR
Gordon Winchcomb

Same letter sent to newspapers on attached list.

RECEIVED
MAY 1 1969
OFFICE OF
STATE HIGHWAY ENGINEER

Daily Pacific Builder
465 10th Street
San Francisco, California 94118

Daily Construction Service
P. O. Box 3019
San Francisco, California 94119

Daily Journal (AIR MAIL)
1217 Welcome Street
Denver, Colorado

Mid-West Contractor (AIR MAIL)
P. O. Box 766
Kansas City, Missouri 64141

Dodge Construction News (AIR MAIL)
1040 Merchandise Mart
Chicago, Illinois 60654

Daily Construction Service
448 S. Hill Street
Los Angeles, California 90013

OREGON STATE HIGHWAY COMMISSION

PREADVERTISING ANNOUNCEMENT

June 26, 1969

The Oregon State Highway Commission intends to formally advertise the following project on the 5th day of June, 1969. Sealed bids will be received in Room 122, State Highway Building, Salem, Oregon at 9 a.m., Thursday, June 26, 1969.

MULTNOMAH COUNTY: Fremont Bridge Section of Stadium Freeway in Portland. Federal-Aid Interstate Project No. I-405-8(17)303. Super structure. Req. approx. 3,910 cu. yds. Cl. A conc.; 1,010,000 lbs. reinf.; 14,646,000 lbs. A 36, 2,078,000 lbs. A 441, 6,416,000 lbs. A 514 and 14,310,000 lbs. A 588 struct. steel; 788,000 lbs. casting and forgings; 8,639 lin. ft. metal parapet railing; 2,400 tons epoxy asph. pavement; bridge electrical work; 6,000 lbs. aluminum in sign trusses; 362 sq. ft. signs. Completion time 860 calendar days. Req. R. R. Insurance.

Federal requirements applicable to this project accompany the special provisions for the project and must be complied with.

Plans and specifications may now be inspected at the State Highway Bldg. in Salem and at the AGC offices in Portland, Eugene, Seattle, Spokane, and Boise and at the Builders Exchange Cooperative, Portland.

Plans may be purchased at this time in the Salem office upon payment of $5 per set. Prequalification of bidders will be required.

The right is reserved to reject any and all proposals or to accept the proposal deemed best for the State of Oregon.

OREGON STATE HIGHWAY COMMISSION

Glenn L. Jackson, Chairman
Fred W. Hill, Commissioner
Thaddeus B. Bruno, Commissioner

Forrest Cooper
State Highway Engineer

ATTEST:
Floyd Query, Secretary
4-28-69

RECEIVED
MAY 5 - 1969
FOR FILING

I-405-8(17)303

7276

May 1, 1969

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street N. E.
Salem, Oregon 97301

Subject: Fremont Bridge Superstructure
Oregon Project I-405-8(17)303
Your File 08-33.6

Dear Sir:

Our letter to you dated April 28, 1969, was in answer to your Washington Office Memorandum of April 17, 1969, covering five items on the Fremont Bridge Superstructure, which were to be resolved at that time. Our letter of April 28, 1969, indicated the disposition of Items 1, 2 and 3, with the further notation that Items 4 and 5 were to be discussed by our consultants and your Washington Bridge Division for resolution.

I am enclosing 2 copies of a letter from our consultants dated April 29, 1969, and 2 prints each of Sheets 3, 4 and 6, which have been revised. Sheet number 3 was revised as indicated in Item 2 of the April 28 letter. Sheets 4 and 5 have been revised as a result of the conference between our consultants and your Washington Bridge Office.

To our knowledge, this completes all unanswered items on the Superstructure project.

Very truly yours,

Forrest Cooper
State Highway Engineer

By
Tom Edwards
Asst. State Highway Engineer

bc Forrest Cooper
R. L. Porter
F. B. Klaboe
Victor D. Wolfe
Ivan Merchant

IDM:jr
Attachments

bcc: V. E. Skoog
L. H. Young
D. J. Barbee (w/attachment)

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

April 29, 1969

Mr. Ivan D. Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Dear Mr. Merchant:

At your suggestion we contacted Mr. W. S. Wilkes, Chief, Bridge Division of the Bureau of Public Roads to resolve the unanswered items 4 and 5 of their latest comments. There is now no misunderstanding as to the particulars of these items, as I explained to you in my telephone conversation yesterday. We have agreed to make several small revisions to the Stress Sheet No. 4 and 6 in order to satisfy the Bureau and expedite the advertising of this contract. We are enclosing one (1) print of both drawings with the necessary changes marked in red.

The wind load treated as a moving live load involves the laterals of the arch in the vicinity of the center of the main span but since these are minimum sections it has no effect on member sizes, connections, etc.

The design of Floorbeam FB103 was controlled by DL+W which is indicated on Sheet 6. We have added to the Stress Sheet the DL + LL + Imp stresses at the centerline of the beam for informational purposes.

The Bureau through their local office will promptly confirm our discussions in order that you can proceed with your intended advertising date.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L. G. Silano
Project Engineer

LGS?rk
Encls.
cc: Mr. T. Edwards, Asst. State Highway Engineer

NOTED
IVAN D. MERCHANT

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
AM MAY 1 - 1969 PM
7,8,9,10,11,12,1,2,3,4,5,6

4-30-69

RECEIVED
MAY 5 - 1969
FOR LETTER OF APPROVAL AND/OR AUTHORIZATION

FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

PROJECT: I-405-8(17)303

SECTION: FREMONT BRIDGE

WORK : SUPERSTRUCTURE

COUNTY : MULTNOMAH

TO: MR. FORREST COPPER
STATE HIGHWAY ENGINEER
SALEM, OREGON

I-405-8(17)303 Natco
7276

FROM: R. E. SIMPSON, DIVISION ENGINEER
SALEM, OREGON

DATE PS&E APPROVED: APRIL 30, 1969

DATE AUTHORIZED: ----------

YOU ARE AUTHORIZED TO PROCEED WITH THE WORK CHECKED BELOW:

- ○ CONSTRUCTION — ADVERTISE FOR BIDS.
- ○ RIGHT OF WAY.
- ○ OTHER (SPECIFY).
- ○ UTILITY ADJUSTMENT.
- ○ RIGHT OF WAY INCIDENTALS AND RELOCATION PAYMENTS.

REMARKS AND LIMITS OF AUTHORITY:

PS&E DOCUMENTS FOR THE SOBJECT PROJECT HAVE BEEN REVIEWED AND ARE HEREBY APPROVED.

AUTHORIZATION TO ADVERTISE FOR BIDS WILL BE GRANTED WHEN ADEQUATE FUNDS ARE AVAILABLE AND WHEN WE HAVE RECEIVED YOUR REQUEST.

Young
5-5-69

RECEIVED
MAY 1 1969
OFFICE OF
STATE HIGHWAY ENGINEER

OFFICE USE

DATE	SIGNATURE OF APPROVING OFFICIAL	TITLE
4-30-69	For R. E. Simpson	DIVISION ENGINEER

RECEIVED
APR 28 1969
FOR FILE

I-405-8(17)303

7276

April 28, 1969

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon

1437

Re: Your File 08-35.6
Oregon Project I-405-8(17)303
Fremont Bridge Superstructure

Dear Sir:

Your memorandum dated April 17 indicates that your review of the plans and specifications of the subject structure have been completed and are approved subject to the satisfactory resolution of five minor unanswered questions. The five unanswered items will be numbered and discussed in the same order as listed in your April 17 memorandum.

1. Qualifications on welding procedures for ASTM A588 steel - these qualifications have been added to the Special Provisions on page 28.

2. This item questions the wording of the specifications on working strengths for ASTM A588 steel and requests that the Plan Sheet No. 3 be revised from the consultant's wording of "over 3/4 inches" to "up to 4 inches". This change is in line with acceptable stress thickness specifications for A588 steel and will be made.

3. The revision of unit stresses from 115 percent to 100 percent of basic stress for wind loads has been made on Sheet No. 3 of the plans.

4. This item questions the application of wind load as a moving liveload to the arch rib. It is the State's belief that the consultant's letter of March 14 adequately covers this situation. However, the consultant

has been requested and is requested by a copy of this letter to contact the Bureau of Public Roads' Bridge Office in Washington, D. C. to clarify this matter.

5. This item has to do with combined stresses for FB103. It is noted that the April 17 memorandum from your Washington office has a slightly different question than can be read from Item No. 5 of your letter. I quote the entire paragraph from your Washington office regarding the design of FB103:

> "Regarding the design of floorbeam FB103, we suggest a further check to insure that the dead load moment at center line of floorbeam has not been combined with wind moment at the joint."

Again, as in Item 4, this matter has been discussed with the consultant and he has been requested to contact your Washington office to clear up this design question.

The consultant has been alerted to the necessity of clearing up the questions on Items 4 and 5 at the earliest possible time and has been requested to give the State a written memorandum of his discussions with your Washington office. This memorandum will be transmitted to you as soon as possible.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

cc Parsons, Brinckerhoff,
Quade and Douglas
111 John Street
New York City, New York 10038
Attention Mr. Louis G. Silano

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Marchant
L. M. Young
C. M. Maison (enc.)
C. G. Swenson (enc.)

IDM:jr ja

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301
DATE: April 17, 1969

In reply refer to: 08-35.6

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

RECEIVED
APR 18 1969
OFFICE OF
STATE HIGHWAY ENGINEER

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure

We have completed the review of the plans and specifications of the subject structure and approve them subject to the satisfactory resolution of the following minor unanswered questions:

1. Washington office January 3, 1969 memorandum, page 3

Qualifications on welding procedures for ASTM A588 steel. Conversation with Mr. Merchant indicated that you have altered the specifications to include this qualification.

2. Consultant's March 14, 1969 memorandum, page 1

Under Item Sheet 3(b) ASTM A588 for strength properties: fs=27,000 p.s.i. for the plate thickness over 3/4 inches. This "over 3/4 inches" should be changed to "up to 4 inches."

3. Consultant's March 14, 1969 letter, page 2

Item Sheet 3 paragraph 4 - It is our understanding that the consultant has now completed the design using 100% of the basic unit stress for the K-brace under Combined Loads.

4. Washington office February 19, 1969 memorandum, page 1

Item Sheet 4 questioned that the wind on the arch-rib should be treated as a moving load. The consultant's answer on pages 2 and 3 of his March 14 letter did not sufficiently answer this problem and it is felt that this item still should be reviewed.

5. Washington office February 19, 1969 letter, page 1, Item Sheet 6

The consultant's answer on page 3 of his March 14, 1969 letter under Item 4 did not satisfactorily answer this question and it is felt that the floorbeam FB103 should be checked for a combination of wind and dead load stresses.

If our understandings outlined above are correct and if you can complete the above unanswered items we are satisfied with the plans and specifications.

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

FORM PR-121 (5-68)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

TO : Mr. R.M. Phillips, Regional Federal Highway Administrator
Portland, Oregon

DATE: April 17, 1969

In reply refer to:
32-40

FROM : G.M. Williams, Director of Engineering and Operations
By: W.J. Wilkes, Chief, Bridge Division
Washington, D.C.

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure

With reference to your memorandum of April 8, 1969, and in confirmation of a telephone conversation on April 16, with Messrs. Tokerud, Sears, and Mowatt, we have the following additional comments:

Relating to February 19 memorandum

1. We suggest that A588 steel be permitted at a stress level of 27,000 psi in thicknesses up to 4" rather than in thicknesses over 3/4".

2. We also suggest that members designed for wind load only be designed for basic unit stress rather than for an increase of 15% over basic unit stress.

3. Regarding the design of floorbeam FB103, we suggest a further check to insure that the dead load moment at center line of floorbeam has not been combined with wind moment at the joint.

4. Section H-H, Plan sheet 13, shows the 8 x 3/4 (CR) plate resting on the "milled" top end of the 4 x 1/2 match plates of the deck plate stiffeners. We suggest consideration be given to fastening the 8 x 3/4 plates to the match plates and the ommision of the milling.

Relating to January 3 memorandum

1. We recommended that welding procedure qualification requirements for ASTM A588 steel be added to the special provisions but there is no mention of this in the information submitted by your April 8 memorandum. We suggest a check to make sure that this item has not been overlooked.

2. Special Provisions Page 31, 3.23; Page 21, 410-3.5 and Page 32, (3) require the plate to be rounded to a radius of 1/16". We believe it would be desirable to also specify grinding be done in the direction of stress to avoid notch affects transverse to the stress.

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

FORM PR-48
(REV. 10-66)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

TRANSMITTAL AND REQUEST FOR INITIAL PROGRAM APPROVAL OF PROJECTS
(PPM 21-1)

STATE HIGHWAY DEPARTMENT: Oregon

DATE: 4/28/69

BY (Signature): Mr. Young's April 18, 1969 letter

TITLE:

CLASS OF FEDERAL FUNDS: XXX ☒ FAI ☐ FAP ☐ FAU ☐ FAS ☐ OTHERS

STAGE 1 * ITEM NOS. _____ THRU _____

STAGE 2 ITEM NOS. 581 THRU _____

ITEM NO.	PROJECT NOS.	LENGTH (Miles)	TOTAL ESTIMATED COST	FEDERAL FUNDS	OTHER IDENTIFICATION AND/OR REMARKS (State) Location	Work
581	I-405-8(17)303	0.41	$25,500,000	$23,460,000	Stadium Freeway-Fremont Bridge	Bridge Superstructure

1-405-8(17)303
7276

REMARKS (Division)

RECEIVED
MAY 2 - 1969
FOR FIL.

Young
H-30-69

RECEIVED
APR 30 1969
OFFICE OF
STATE HIGHWAY ENGINEER

F. B. KLAGGE
NOTION

RECOMMENDED DATE	RECOMMENDED SIGNATURE AND TITLE	APPROVED DATE	APPROVED SIGNATURE AND TITLE
April 28, 1969		4/28/69	For R. E. Simpson, Division Engineer

* Program approval and any authorization to proceed with a Stage 1 project shall not constitute and commitment of Federal funds nor shall it be construed as creating in any manner, any obligation on the part of the Federal Government to provide Federal funds for the undertaking.

USCOMM-DC 15396-P66

RECEIVED
APR 24 1969

FOR Memorandum

I-405-8(17)303

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

7276

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301
DATE: April 22, 1969

In reply refer to: 08-35.7/410.3

SUBJECT: Oregon Project I-405-8(4)303
Fremont Bridge Section

Staff Attorney Jack L. Sollis' letter of April 2, 1969 requested our approval of several changes to Paragraphs 4 and 7 of the Use Restrictions covering File 42242 - Kellogg. This letter constitutes our approval of the changes in the Use Restrictions.

RECEIVED
APR 23 1969
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
APR 22 1969
FOR FILING

Form FHWA-121 (12-47)
UNITED STATES GOVERNMENT

Memorandum

I-405-8(17)303
7276

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

DATE: April 18, 1969

In reply refer to: 08-35.7

SUBJECT: Oregon Project I-405-8(4)303
Fremont Bridge Section

Staff Attorney Jack L. Sollis' letter of April 14, 1969 requests our concurrence in the revised wording of use restrictions covering File 42134 - Pacific Power and Light Company. We have reviewed the changes and concur in the use restriction.

Still under study is the change in the use restriction covering File 42242 - Kellogg. The change in the use restriction is being reviewed with your engineering personnel and a final decision can be expected at an early date.

4-21-69

RECEIVED
APR 21 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
APR 24 1969
FOR FILING

Thaddeus Bruno, Member

Portland
I-405-8(17)303
7276

April 16, 1969

Mr. A. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage St., N. E.
Salem, Oregon 97301

Dear Sir:

We are submitting program data for one Interstate Project, Item 5d1, Project No. I-405-8(17)303, Fremont Bridge Superstructure which we desire to have included in the Federal-Aid Interstate Highway Program.

It is our present intention to obtain your approval of P.S. & E. data for the project and preadvertise same on May 1, 1969 with formal three-week advertising from June 6, 1969 to bid opening June 26, 1969. This procedure is necessary because of obligation balance restrictions to allow for the extended advertising time we feel this project requires.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

L. H. Young
Program and Planning Engineer

RHC:bb

MONTHLY TRANSACTION NO.

DATE SUBMITTED TO E.O.

FORM PR-1 (REV. 4-61)

FEDERAL-AID PRO

(PPM 21-1

CARD 2	REPORT NUMBER (18) 1 (20)	PROJECT LOCATION (45 typewriter spaces) 21 I-405 Fremont Bridge Superstructure (Portland) 65						ADT	PRESENT 43,600	FUTURE (66) 72,400	YEAR (70)(71) 89 (72)				
CARD 3	CHARACTER OF PROPOSED WORK (35 typewriter spaces) 26 Bridge Superstructure 62		NATL. FOREST (63) (65)	FH ROUTE NO. (66) (69)	SUPV AGCY (69)	DA CLASSIF. (70)	DA AREA (71)		EMERG. YR. (72) (73)	PL. AUTH YR (74) (75)					
CARD	CLASS OF FEDERAL FUNDS Interstate								COUNTY NAME						
	NAME OF URBAN AREA 17-31 Portland								ROUTE NO. I	FEDERAL-AID I-405					

CARD 5	LINE NO.	CHANGE CODE	PROJECT CODE	WORK CLASS	WORK TYPE	STEP	TERMINI (Full description)	MILES	ESTIMATED PROJECT COST: TOTAL ESTIMATED COST	ESTIMATED PROJECT COST: FEDERAL FUNDS
1	(1-4)5	(10	41	42	43 46	53		(54) (58)	(59) (66)	(67) (76)
5					PE		I-405 Fremont Bridge Superstructure (Portland)			
5					ROW					
5					CONST (CODE)			0.41	25,500,000	23,460,000
							PROJECT TOTALS	0.41	25,500,000	23,460,000
								(16) (23)	(24) (33)	

CARD 1	CODE 1	PREPARED BY
1	14	PROGRAM APPROVAL DATES

1

Budget Bureau No. 41-R2067; Approval Expires February 28, 1966

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

FEDERAL-AID PROGRAM DATA

(PPM 21-1)

	PRESENT	FUTURE	YEAR	REGION	STATE NAME	STATE CODE	APPN CODE	ITEM NO.
ADT	43,600	72,400	89	08	Oregon	35	042	581

AGCY	DA CLASSIF.	DA AREA	EMERG. YR.	PL. AUTH YR	PROJECT NUMBER PREFIX LETTER(S)	NUMBER	SEQ. NO.	I. Projects Only POST MI.	DESIG.
					I-	405-8(17)		303	

COUNTY NAME: Multnomah — CODE: 051

PROGRAM STAGE: [ ] 1 OR [X] 2

ROUTE NO. I — FEDERAL-AID: I-405 — STATE: — U.S.: I-405

ESTIMATED PROJECT COST BY PHASES	TOTAL ESTIMATED COST	FEDERAL FUNDS	STATE FUNDS	OTHER FUNDS
.41	25,500,000	23,460,000	2,040,000	
.41	25,500,000	23,460,000	2,040,000	

CHARACTER OF PROPOSED WORK (Full description)

Construct main br. span superstructure, length 2,159'. (Two level with 4-12' lanes & 10' shldr. area each level), installation of lineal illumination and traffic signs.

ROW-200' normal; Access Control-full; Parking Restrictions-complete.

REMARKS

Additional Data: Items 35A, 35D and 518, Projects I-405-8(1)301, I-405-8(4)303 and I-405-8(16)303.

USCOMM DUSCOMM-DC 48908-P61

RECEIVED
APR 14 1969

Memorandum

FO.. I-4(5)(7)303

TO I-4(5)(7)303
Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

72766

FROM R. E. Simpson, Division Engineer
Salem, Oregon

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

DATE: April 14, 1969

In reply refer to: 08-35-EC/400.1

Copy 'No' Hearing file

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge (Superstructure)
Public Hearing Status

We concur that additional hearings are not required for the subject project. This determination was made based on the information submitted in your April 1, 1969 letter.

We consider that design approval has already been given as we have had the opportunity on several occasions to review and comment on preliminary plans for this structure.

4-16-69

RECEIVED

By ASST. STATE HWY. ENGR.

RECEIVED
APR 15 1969
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
APR 1 - 1969

FOR FILING

I-405-8(11)303
7276

April 1, 1969

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street N. E.
Salem, Oregon

Fremont Bridge (Superstructure)
Oregon Project I-405-8(17)303

Dear Sir:

We hereby request your concurrence that additional hearings are not required; also, design approval is requested for this project which is on our schedule of contracts for bid opening on June 26, 1969. We base these requests on the following:

1. A public hearing was held on June 13, 1968, for the I-405 route, and work has progressed steadily since. The bridge superstructure is one of the last phases to be constructed on the route.

2. Design of the northerly end of the I-405 route, consisting of the west interchange, east interchange and the bridge, was awarded to the consultant engineering firm of Howard, Needles, Tammen and Bergendoff, with the agreement dated March 14, 1967. Their design of the superstructure was submitted to you on Nov. 20, 1968.

3. The pier construction contract for this structure was awarded on February 27, 1968, and is 80% complete.

4. Right-of-way was all purchased prior to February 27, 1968 for this project.

Considering that 1, 2, 3 and 4 above took place while PPM 20-8(1) was in effect, we contend that we have complied with public hearing requirements and the best interest of the public has been served as stated in Mr. J. A. Simmons's circular memorandum dated March 7, 1969.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

L. H. Young
Program and Planning Engineer

cc: F. E. Kleber
D. J. Barber
R. W. Ellison
L. N. Chase
Ben Gilford

DAR:ia

RECEIVED
MAR 25 1969
FOR FILING
I-405-8(17)303
7276

March 24, 1969

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon

Re: Your File 32-46
Fremont Bridge
Oregon Project I-405-8(17)303
Bridge No. 2529

Dear Sir:

Under date of February 19, a supplemental memorandum covering the plans and specifications for the Fremont Bridge superstructure was furnished the State. Previously, review memorandums dated November 29 and February 18 had been received and were answered by our letter of March 14. I am enclosing a 9-page letter dated March 14 from our consultants on this project (Parsons, Brinckerhoff, Quade and Douglas, Inc.). Many of the questions in your February 19 memorandum are answered by the enclosed letter from the consultants. The comments will be referred to by sheet number and in the same order as listed in your memorandum:

Sheet 3. As noted by the consultants, in all cases an attempt has been made to clarify the type of steel on the detail drawings. The working stresses for A36 and A441 are required to be as specified in AASHO 1965 for all thicknesses of steel. Under "Stresses for Combined Loads", the consultants have indicated that the practical size of the member is such that the combined stresses are at or below the basic unit stress. The basic unit stress will be shown on Sheet 3.

Sheet 4. Please refer to the consultants' letter.

Sheet 6. Please refer to the consultants' letter.

Sheet 15. The plate details and welding details at the junction of the arch rib and stiffening girder have been revised previously. Please refer to our comments regarding details A and B, Sheet 15.

Sheet 16. The consultants have supplied a pin connection detail and this will be added to the drawings.

Sheet 29. Please refer to the consultants' comments on the use of A588 steel for the deck plate and stiffening ribs. The State is in complete agreement with the consultants, inasmuch as we believe that the most corrosion-resistant steel possible should be used for the orthotropic deck plate. Previous discussions with the Bureau of Public Roads indicated great concern for its protection and the use of a highly corrosion-resistant steel.

A recent check with one of the major steel suppliers indicates that the cost of A242, A441 and A588 is the same when the maximum corrosion resistance is specified. The contact surface between the wearing surface and the steel plate is the critical level for corrosion, as any leakage through the wearing surface will permit moisture to attack the plate and not be susceptible to inspection. The bottom side of the plate is, of course, always exposed to atmospheric conditions.

For the foregoing reasons, the State does not propose to make any change in the type of steel specified for the deck plate and stiffening ribs.

The last comment refers to the size of the handholes in the stiffening ribs at the deck section splices. I refer you to consultants' comments on this matter.

The consultants' letter also covers a further investigation into the paint specifications. It is noted that they also recommend that the current 9190 list of qualified products for the inorganic zinc be eliminated. This was done by a recent letter of addendum for the West

Fremont Interchange and it is proposed to use the same specification on the main river portion of the structure as for the West Fremont Interchange.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

Enc.

bc Forrest Cooper
R. L. Porter
F. B. Klaboe (enc.)
Victor D. Wolfe
Ivan Merchant
L. H. Young (enc.)

XDE:jr ja

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ENGINEERS

March 14, 1969

Mr. Ivan D. Merchant - Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge - Superstructure
Supplemental Bureau Comments

Dear Mr. Merchant:

We have reviewed the additional comments by the Bureau of Public Roads dated February 19, 1969 forwarded with your letter of February 28, 1969, and have the following to offer:

1. Sheet 3

It was our intention in the Material paragraph of the General Notes to note the types of materials intended for use on this project.

For high strength low-alloy structural steel conforming to ASTM - A441 or A588, we have used the following design criteria:

a) ASTM - A441 for strength properties: fs = 27,000#/□" for plate thickness up to and including 3/4 inch.

b) ASTM - A588 for strength properties: fs = 27,000#/□" for plate thickness over 3/4 inch.

c) For corrosion resistance properties for all plate thickness, ASTM - A588.

The important consideration, and one that concerns us all, is that the material designation for each and every member be clearly noted on the detail drawings and the stress sheets. This is what we have strived to attain and believe we have accomplished.

Revised sheets 10, 16, 29 and 36 To D.O.T. 3/18/69
Copy to Dr. E.
" Spans.

2. Sheet 3

Standard practice for the usual range of spans covered in AASHO when designing bracing members controlled by wind alone is to design for 100% basic unit stresses. The wind forces adopted in AASHO for superstructure design are predicated on wind velocities of 100 M.P.H.

For larger structures, so many other variables enter into the picture that in order to effect economy in design and to be able to design with any degree of certainty or reliability for wind forces it is usually advisable to conduct wind tunnel tests on sectional models.

The results of the wind tunnel test on the sectional bi-level roadbed model for this structure indicate that for a wind velocity of 120 M.P.H. the maximum drag component is approximately 52 lb/ft^2, while the arch-rib maximum drag component for the same velocity is 116 lb/ft^2. The corresponding forces used in the design are 75 lb/ft^2 for the roadway and 200 lb/ft^2 for the rib (100 lb/ft^2 for each rib). The force system adopted and used in the design would correspond to wind velocities in excess of 150 M.P.H.

It is not unusual when dealing with the probability of experiencing wind of the intensity and velocity adopted for this design to permit some overstress. For the particular conditions in question (i.e. wind only) we would permit a 15% overstress; however, from practical considerations the minimum sections adopted for the bracing requirements of the arch-rib satisfy the basic design unit stresses. If you feel it advisable to revise the design unit stress for the K-brace under Combined Loads to 100% basic unit stress, we would have no objection.

3. Sheet 4

This structure was analyzed as a space frame for wind forces utilizing a "Univac" 1107 electronic computer. Two cases of wind loading were considered:

(1) Case I - Loading the entire center span from Panel Points 14 to 14'.

(2) Case II - Loading the entire structure from Panel Points 0 to 0'.

Wind load may not necessarily be uniformly distributed along the entire structure, but it would certainly be present to some degree over the full length. The advisability of treating the wind load as a moving live load for long span bridges is certainly open to question. We did, however, examine the effects of treating the wind load as a moving live load in the main span. This condition would certainly control the design of the laterals in the vicinity of the center of the main span. The minimum sections utilized for the bracing requirements of the main span satisfy the governing forces which exist in the vicinity of the portal. The force system governing the design in the vicinity of the portal is a more severe condition than can be obtained elsewhere in the span by treating the wind force as a moving live load.

The forces shown for Arch Lateral Bracing on Sheet No. 4 are the accompanying forces for Case II which controls the design of the laterals in the critical regions.

4. Sheet 6

The control for the design of Floorbeam FB103 is the combined loading case Group II AASHO, consisting of DL+W @ 125% basic unit stress.

Floorbeam FB103 functions primarily as a portal strut for the lower arch bracing system and transmits the wind reaction from the lower deck suspended roadway to the bearings. The floorbeam functioning as part of the overall portal frame develops dead load bending moments at the joints, which in combination with the wind moments control the design.

We have listed in Stress Sheet III on Sheet No. 6, under Floorbeam FB103, the stresses associated with the loading case controlling the design. No attempt was made to tabulate stress conditions which do not influence the design.

5. Sheet 15

The revised junction details and the related welding associated with this revision submitted to you on February 14, 1969 answer the question raised here.

6. Sheet 16

The wind chord connection to the arch rib at Panel Point 4 shown on Sheet No. 16 was detailed as a flexible connection using 6 x 6 angles. This will function adequately at this location; however, we agree that the use of a pinned and slotted detail similar to that at Panel Point 13, Sheet No. 24, will maintain uniformity in detailing. The necessary change is shown in red on the enclosed print of Sheet No. 16.

7. Sheet 29

The Plans and Specifications call for the material of the orthotropic deck consisting of the deck plate and the trapezoidal stiffeners to be fabricated from corrosion-resistant steel conforming to ASTM designation A588.

The Bureau of Public Roads questions the necessity for using ASTM - A588 since ASTM - A441 is available in the same stress level at a reduced cost.

The decision to use a corrosion-resistant steel for the deck plate dates back to the original report work on "Alternate Designs for the Fremont Bridge" dated July 1965 and April 1966. This decision emanates from past correspondence between Mr. R. L. Porter, Oregon State Highway; Mr. M. N. Quade, Parsons, Brinckerhoff, Quade & Douglas; and Mr. E. L. Erickson, Bureau of Public Roads.

The reasons for using a corrosion-resistant material are a matter of record. Suffice it to say that we cannot at this time advance any further claim that would materially alter or change this decision.

The stress requirements for the deck plate trapezoidal stiffeners will be satisfied if fabricated from material conforming to either ASTM - A441 or ASTM - A588. You may recall that originally we contemplated using A441 stiffeners with the interior surfaces painted. A later evaluation disclosed that a cost savings would be effected by utilizing a corrosion-resistant steel and eliminating the interior surface painting.

The Contract Drawings and the Specifications were completed

reflecting the decision to use ASTM - A588 steel eliminating the interior painting.

8. Sheet 29

Presently, the size of the hand holes in the ribs at splice locations are 6" x 14". How much of a reduction in this size can be accomplished without making it impractical to perform the necessary bolting of the splices is questionable. Further, we don't know what good will be served or for that matter what advantage will be gained by doing this.

9. Flexural Fatigue Tests

Your telephone request concerning the flexural tests of the paving material formed the basis for some subsequent informative disclosures. Most of this work on this subject was and is currently being carried out at the California Division of Highways' Materials and Research Dept. for the San Francisco Division of Bay Toll Crossings.

Flexural fatigue tests were a requirement of the Specifications for the San Mateo-Hayward and the San Diego-Corinado Bridges. This work was carried out under the direction of Mr. Chuck Sien and not by Fred Frondriest of Battelle Institute as we had previously indicated.

A very interesting paper on this subject, entitled "Flexural Tests of Paving Materials for Orthotropic Steel Plate Bridges", written by C. T. Metcalf, concerns itself with a test program to investigate the properties of designated materials as an aid to the selection of the paving system for the San Mateo Bridge.

The test samples are fabricated to represent the deck panel. The object is to reproduce in the laboratory a stress in the extreme fiber of the steel plate in contact with the overlay material, of the same magnitude as would exist in the prototype under the action of a wheel load.

With relation to the test samples for the Fremont Bridge, we would require a cyclic load for flexure sufficient to produce a stress of 18,000 psi in the extreme fiber in contact with the epoxy asphaltic concrete. The load should be applied at

a rate of 5 cycles per second. Specimens should be capable of withstanding one-million cycles of repeated loading without cracking or other failure of the surfacing.

To produce a tensile strength of 18,000 psi in accordance with the testing apparatus and procedure specified in ASTM - C293, the Special Provisions Page 74 should be modified to apply a repetitive loading of 1000 pounds at five cycles per second to the center of the test specimen symmetrically supported on steel supports at twelve-inch centers.

An interesting point brought out by Mr. Sien concerns itself with the requirement of designing the deck plate for a live load deflection to span ratio. He indicated that they would not be concerned with using 1/300 and actually attempted to do this on the San Diego-Corinado Bridge. The use of a minimum 3/8" deck plate for the San Diego Bridge produced a ratio of ± 1/500. Flexural Fatigue tests on the epoxy asphalt concrete samples for this bridge were stopped after exceeding two-million cycles. Longer fatigue life may be attributed to improved gradation of the aggregate used in the mix which plays an extremely important role in fatigue properties.

10. Painting Specifications

In a recent telephone conversation you indicated your intention to revise the General Requirements of Article 414-2.5(c), Inorganic Zinc Silicate, by eliminating Type I, Class 3, Military Specification MIL-P-23236 (Ships) and substituting Naval Ships Technical Manual, Chapter 9190. You explained that the reason for this change was to provide a more restrictive Qualified Products List to obtain products more readily suited for field touch-up.

No 9190 eliminate

We have in the interim investigated the ramifications of this change and how it relates to this structure. We would like to offer the following:

1) Chapter 9190, Naval Ships Technical Manual, covers painting procedures to be carried out aboard a ship. One section of this general painting manual is devoted to the subject of Zinc Silicate Coatings for "Tank Surfaces." This

section covers Inorganic Zinc Silicate products qualified under Military Specification MIL-P-23236 (Ships) and gives a QPL (Qualified Products List) showing numerous approved manufacturers.

The test procedures under MIL-P-23236 (Ships) to qualify a Zinc Silicate on the QPL list are intricate. They involve manufacturer's laboratory data, Navy Department laboratory chemical evaluation findings, Navy laboratory panel tests, and an "in-service evaluation." The Zinc Silicates are tested for basic corrosion protection, chemical resistance and salt water immersion.

As part of this overall evaluation, the material is tested under "touch-up" procedures in order to insure that it can be easily repaired after initial application in the event it becomes necessary.

The use of MIL-P-23236 (Ships) to qualify zinc materials was specified on many large projects. Most noteworthy of these, to name but a few, are the San Mateo-Hayward Bridge, the BARTD Project in San Francisco, and the Golden Gate Bridge.

Any number of the Zinc Silicate materials on the QPL-23236 list have past histories of proven service performance. A prime consideration for recommending and including in the Special Provisions the requirement that the QPL-23236 list be utilized as a "qualifying" medium was to be certain that only time-proven Zinc Silicates be considered for this project.

Another consideration for our recommendation can be attributed to the decision requiring faying or contact surfaces to be coated with inorganic zinc. It is not our intention to delve into the advantages derived from this procedure as this was done on numerous occasions, but rather to stress the underlying considerations for this decision. Our decision was influenced by the work of W. H. Munse at the University of Illinois on Static and Fatigue Tests on Bolted Connections coated with Rust-Ban 191, Dimetcote 4, and the work of Rivera and Slutter at Lehigh University for the Carboline Company on Carbo Zinc 11.

From the conclusions of these test programs it appears that bolted connections in which the contact surfaces have been coated with the above-listed manufacturer's products develop a friction resistance comparable to that of sandblasted or rusted surfaces. These inorganic Zinc Silicate coatings meet the requirements of Type I, Class 3 Military Specification MIL-P-23236 and are included in the Qualified Products List QPL-23236.

We also considered prior to recommending the Qualified Products List 23236 the requirements for the orthotropic deck paving system. We specified under Surface Requirements in Paragraph 3.3, Page 73 of the Special Provisions, and also Paragraph 3.3(b), Page 74, the adhesion requirements of the surfacing material to the painted steel deck plates.

You may recall that Rust-Ban 191 was the inorganic zinc prime coat used in conjunction with the epoxy asphalt concrete paving system on the San Mateo-Hayward Bridge. This manufacturer's product is qualified on the QPL-23236 list.

Another section of Chapter 9190, Part 3 - Surface Ships, covers Zinc Silicate Coatings for application to "Exterior Surfaces." This section is far less stringent in its test requirements, which may be due mainly to the fact that these materials do not have to withstand as severe a service condition as do coatings for tank surfaces. It is important to note that there is no test for ease of "touch-up" for materials qualifying for 9190 "Exterior Surfaces", and there should be no misunderstanding on this point.

The requirement of MIL-P-23236 (Ships) to qualify inorganic zinc coatings for "Tank Surfaces" when applied to bridge structures has proven successful in the past. While it is true that a few of the products which qualify for "Tank Surfaces" also qualify for "Exterior Surfaces", there is no guarantee that all "Exterior Surface" Coatings will qualify for "Tank Surface" coatings. The corrosive atmosphere associated with marine structures makes it mandatory to utilize coatings with satisfactory performance history. The painting specification which was prepared in consultation with you for the Fremont Bridge was proposed

after considerable study and is based upon recent experiences with the newer paint systems. We recommend that the original requirement of MIL-P-23236 (Ships) be retained in the specifications to qualify the inorganic zinc coating.

11. We are also including herewith prints of Sheet Nos. 29 and 36 with the revisions we discussed pertaining to the typical cross-frame and the addition of the back-up bar for the longitudinal deck plate welds.

We believe that we have provided you with sufficient information and advice in answer to the Bureau of Public Roads' comments. If we can be of any further assistance, please do not hesitate to call.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano

L. G. Silano
Project Engineer

LGS/co
Encls.

cc: Mr. T. Edwards
Assistant State Highway Engineer
Oregon State Highway Department

Form FHWA-121 (12)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

TO : Mr. R.M. Phillips, Regional Federal Highway Administrator
08-00.35 Portland, Oregon

DATE: February 19, 1969

In reply refer to: 32-46

FROM : C.M. Williams, Director of Engineering and Operations
By: W.J. Wilkes, Chief, Bridge Division
Washington, D.C.

SUBJECT: Oregon I-405-8(17)303 Advance Details

Supplementing our memorandum of January 3, 1969, on the above subject, we have the following additional comments:

PBP+D

(1) Sheet 3

Under "Material", for high-strength low-alloy structural steel, it would appear that either A441 or A588 could be used. A 441 can only be used at the design unit stress specified in thicknesses of 3/4-inch or less, and should be so noted. (2) Under "Stresses for Combined Loads", an increase of 15% in basic unit stress is not permitted by AASHO for wind only in the K bracing system.

(3) Sheet 4

We question that the wind on the arch ribs has been treated as a moving load and suggest this be reviewed.

(4) Sheet 6

It appears that wind and dead load moments have been combined in the design of FB103. We question that these moments occur at the same point and suggest the design be rechecked. A tabulation of live load moments should be shown.

(5) Sheet 15

We question the possibility of making the inside welds on the arch rib at the junction with the stiffening girder, and suggest these welding details be modified.

OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
FEB 27 1969
AM PM

(6) Sheet 16

We suggest the wind chord connection to the arch rib be pinned and slotted as is done on sheet 24 at panel point 13.

(7) Sheet 29

We question the necessity of ASTM A588 steel in the deck plate and ribs,

-more-

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

since this material will be painted, except for the top of the deck plate which will be covered with a 2½" wearing surface. Its weathering quality is pertinent only when exposed to the atmosphere. ASTM A441 is available in the same stress level and at a reduced cost.

(8) It should be possible to reduce the size of the hand holes in the ribs at the splice locations.

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MAR 17 1969
FOR FILING
I-405-8(17)303
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March 14, 1969

7259

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon

Attention Mr. Herbert A. Schell, Jr.

Re: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure
Bridge No. 2529
Review Memorandums January 3,
February 18 and February 19

Dear Sir:

On November 29, the State submitted a set of advance detail plans and the special provisions prepared by our consultant for the subject project. A memorandum dated January 3 has been received covering your initial review of the above documents. The review comments will be discussed in the same order that they are listed in your memorandum of January 3.

Superstructure Plans:

Sheet 3 - General Notes under the heading "Seismic Forces". It was suggested that the word "Structure" be changed to "Superstructure". This has not been done, as it is our belief that the AASHO Specification, paragraph 1.2.20, refers to the entire structure, including superstructure. The material note specifying type of A514 steel has been deleted. The reference to high strength corrosion resistant bolts will be revised to provide for high strength bolts as required by ASTM A325. The minimum lap for reinforcing steel - Grade 40 - has been revised to 24 diameters.

Sheet 7 - The stringer joint in Section E-E has been revised to provide positive relief during the pouring

of the decking, by requiring a bracket to support the stringer and holes through the stringer web to be reamed and bolted after deck placement. This is a standard detail used by the State for many years and we believe is preferable to the requested change.

Sheet 44 - Please refer to the comments on Sheet 7 above.

Sheet 15 - Details A and B, as shown on Sheet 15 of the structural details, have been revised similar to the sketch accompanying the January 3 memorandum. Also, the welding details have been revised to permit construction.

Sheet 29 - The weld details between the trapezoidal deck plate stiffeners and the deck plate has been revised from a 50° edge preparation to 25°. The consultant was requested to consult with the fabricators on this weld, and it was the opinion that an 80 percent penetration weld could not be made without edge preparation. The decrease in angle from 50° to 25° will effect a material difference in deposited weld metal and assurance that the 80 percent penetration can be obtained. The State is in agreement that the longitudinal deck plate welds on the bridge centerline will be field welded by the submerged arc process and will require a single "V" groove weld and backing strip. The weld symbol for this weld will so require.

Special Provisions:

The changes noted in comments referring to pages 24, 25, 26, 28, 29 and 31 have all been made and will be reflected in the final copy of the Special Provisions. Also, the suggestions on welding of aluminum, pages 76 and 79, have been complied with.

Additional comments were received under date of February 18. Again, we wish to refer to these items as they are numbered on this memorandum.

Items 1, 2 and 3 - Changes noted will be reflected in the final copy of the Special Provisions.

Item 4 - Refers to nonskid studs on the horizontal plate portions of expansion devices and the State desires

to retain the wording of the Specifications referring to the two manufacturers of this type of material because of the known properties of the material and the very minor amount of material involved.

Item 5 - This is a request that the inorganic zinc silicate also be on the current list of approved coatings for use on the exterior of ships listed on NAVSHIPS 9190. This approved list would be in addition to the qualified Products List QPL-23236-21. The reason given for the addition of NAVSHIPS 9190 is to assure a material capable of being repaired. QPL-23236-21 covers four classes of paint. The material specified is covered as Type 1, Class 3. It is the State's understanding that the inorganic zinc, Type 1, Class 3, is readily repaired; whereas, Classes 1, 2, and 4 do present some difficulty in field repair. The inclusion of NAVSHIPS 9190 as an additional requirement will lead to confusion and argument. The State proposes to continue the use of the qualified Products List QPL-23236-21 only for the inorganic zinc silicate primer.

Item 6 - This item has been complied with in the Special Provisions.

Item 7 - This item refers to specific equipment and has been deleted and the required equipment referred back to structural steel paint council requirements.

Item 8 - Refers to special equipment for aviation warning beacons. Inasmuch as the listed items are FAA approved, it is believed desirable to retain the wording as listed in the Special Provisions.

Supplementing the memorandums of January 3 and February 18, a memorandum dated February 19 has been received in this office. A copy of this memorandum has been sent to our consultant for the answers to some of the comments. You will be advised as soon as possible regarding the comments on your February 19 memorandum.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Marchant
L. H. Young

IDM:jr/TE:Ja

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MAR 6 - 1969
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I-405-8(17)303
7276

BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

February 27, 1969

08-33.7/411.21

Mr. Ralph M. Phillips, Regional Administrator
Portland, Oregon

Original signed by
R. E. Simpson
Division Engineer

R. E. Simpson, Division Engineer
Salem, Oregon

Oregon Project I-405-8(4)303
Fremont Bridge Section
Request for Federal Condemnation of Union Pacific Railroad, File 36027

The Oregon State Highway Department is requesting Federal condemnation of the Oregon-Washington Railroad and Navigation Company (Union Pacific Railroad Company). The State is unable to secure right of entry to the railroad's property with sufficient promptness to prevent a delay in the construction of the last Vancouver Interchange which is scheduled for bid opening on August 21, 1969. In accordance with Paragraph 4 of PPM 80-7 we offer the following comments and recommendations:

1. The importance of securing a right of entry by June 1, 1969, which will allow clearance of improvements by bid opening, cannot be over emphasized. At the present time two piers for the Fremont Bridge are under construction. The West Interchange at an estimated cost of $21,400,000 is scheduled for bid opening on April 17, 1969. The Fremont Bridge superstructure at an estimated cost of $12,400,000 is scheduled for bid opening on June 26, 1969. The East Fremont Interchange at an estimated cost of $12,500,000 is scheduled for bid opening August 21, 1969. The Fremont Bridge and the East Fremont Interchange is the last link connecting Interstate 405 and Interstate 5. Federal and State funds amounting to $120 million are involved in Interstate 405 which includes the Fremont Bridge.

The justification for Federal condemnation is contained in two letters dated February 6 and 20, 1969 signed by State Highway Engineer Forrest Cooper. We have reviewed the justification and concur with the State's position that it cannot acquire the land with sufficient promptness. Our study of this case indicates that the State would secure a permit of entry only by according to the Railroad's demands for compensation and consideration beyond that contemplated by Federal-aid procedures. The State started voluntary negotiations with the Railroad in April of 1966. Attempts to file a State condemnation action would meet the delaying tactics outlined in Mr. Cooper's letters. It is anticipated that the Railroad will attempt to delay Federal entry by requesting time to adjust their facilities. Therefore, this case should be filed immediately in order to secure timely use of the right of way by June 1, 1969.

(over)

2. Public Roads authorized the State to commence right of way acquisition on October 31, 1961. The project was advanced to Stage 2 program status on February 27, 1962. The project agreement contains the provisions required by Section 108a, 108b and 111 of 23 U.S.C.

3. The right of way shown on the enclosed plans is necessary for completion of the Fremont Bridge which is the last link connecting Interstate 405 with Interstate 5.

4. The specific interest in lands to be acquired is a permanent easement for the construction, operation, inspection, maintenance and reconstruction of elevated highway structures and supporting bents and other necessary and related facilities upon and across the real property of the Union Pacific Railroad. There will be complete control of access to the elevated highway structures. The Railroad will retain the right to go underneath the elevated structures as well as to utilize the area as set out in the attached permanent easement.

5. The State plans to acquire a permanent easement as set forth in the attached easements and descriptions. The title report does not indicate that there are any outstanding interests such as mineral or utility easements. In the event that there were any utility easements, the State would deal separately with the involved utility companies.

6. The legal description, permanent easement, title data, right of way map and aerial photograph of the larger tract is considered adequate. Due to the fact that the acquisition is from a larger tract which involves switching yards and other related facilities of the Railroad, both the State and this office believe that the larger tract can be better shown by the enclosed aerial photography. The right of way is on new alignment.

It should be noted that the proposed permanent easement was previously reviewed by our Washington office and received written approval. Since that approval there has been several minor changes in the use restrictions to comply with city building codes. This was discussed with Mr. E. J. Zalesko of the Office of Right of Way and Location and it was his suggestion that the changed easement be forwarded at the time the case was submitted for Federal condemnation. We have reviewed the changes and are in agreement with the use restrictions.

We have reviewed the State's appraisals and review appraisal and concur that $213,000 represents the fair market value of the acquisition. The appraisals were prepared in accordance with the Federal rules of

(more)

evidence as to valuation. It should be noted that a before appraisal was not made of the larger tract which involves the entire Union Pacific Railroad switching yard and other related facilities. This procedure was followed because the State's railroad consultant, Mr. J. W. Diffenderfer, has indicated that there are no operational damages. This matter has previously been discussed with Messrs. Fletcher Krause and E. J. Zalesko of the Washington office.

7. The State has tendered the Railroad a written offer of $213,000 for the needed right of way in accordance with their review appraisal. Negotiations have been handled by the State's Railroad and Utility Attorney Jack L. Sollis. The Railroad has taken the position that the three building improvements to be acquired are operating property. Our Washington office and this office have concurred that two of the buildings are operating property but the National Carloading warehouse was determined to be nonoperating property. The Railroad's position is that the buildings should be adjusted with no credit to the project as required by Paragraph 4h of FPM 30-3. Due to the fact that agreement cannot be reached on these points the appraisals and offer are on the basis of the fair market value of acquiring the buildings. It is our observation that the Railroad's negotiations have been of a delaying nature in an effort to secure fulfillment of their demands by placing the State in the untenable position of not being able to secure prompt right of entry in order to let a construction contract.

The Railroad has also asked for a commitment from the State to trade them certain excess lands which have been acquired from other property owners in the area. The State is willing to take such action as part of a final settlement but not as part of a partial settlement. These parcels of land represent excellent bargaining tools for any negotiations that might take place after the filing of the case. The State's Railroad Attorney, Mr. Jack Sollis, will be willing to give the Federal attorneys his full cooperation in going over the many ramifications of this complex case.

8. It is our understanding that under Federal condemnation procedures the court deposit is 100 percent of fair market value. The court deposit should be $213,000 which is the fair market value as set forth in the State's review appraisal. In recommending this amount of deposit, the three buildings within the taking have been considered on the basis of their depreciated value. Any future negotiated settlement that might treat any improvements as operating property should consider that the deposit was on the basis of fair market value.

The State has developed their planning sufficiently to satisfy us as to the effect of the proposed construction upon adjacent property and

(more)

the treatment of access control in the area of a Federal acquisition. Our Metropolitan Area Engineer will maintain and supervise lands to be acquired and held in the name of the United States pending transfer of title and jurisdiction to the State.

Enclosures
1. OSHD ltrs, 2-6 and 2-25-69
2. Legal Description (3 cys)
   Permanent Easement and Use Restrictions (3 cys)
3. Right of Way Map (3 cys)
   Aerial Mosaic (3 cys)
4. Appraisal (3 cys)
   Review Appraisal (3 cys)
   Diffenderfer Report (3 cys)
5. Title Report (3 cys)
6. Portland Building Code

cc:
Region (08-00.11)
Region (08-00.32)
OSHD (Forrest Cooper)
Mathias (2 cys)

RECEIVED
FEB 27 1969
DIRECTOR
STATE HIGHWAY ENGINEER

FORM FHWA-121A (2-68)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

Edwards

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

DATE: February 18, 1969

In reply refer to: 08-35.6

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure

Mitchell - for info
Sheneman

On January 7, 1969 we hand carried to Mr. Merchant our Washington office comments on the plans and specifications that you submitted to our office November 20, 1968. Since then we have continued our review and find the following additional points in need of consideration:

comm to Spec. 2/24

Lowe

1. Article 5-5 (Page 2). Classification of completion and bid dates.

no change

2. Article 404-4.2 (Page 19). Compression joint seals might also be rejected if stretch is considerably over 5 percent of the true length.

Lowe

3. Article 410 (Page 20). The high yield and corrosion resistant steels are propriety items. We recommend that the steel be specified only as ASTM A514 or A588.

Lowe

4. Article 410-2.2 (Page 21). Many propriety items are specified in this specification that should be eliminated.

Ivan Copy 2/24/69

copy yours

5. Article 414-2.5(~~b~~ c) (Page 48). The inorganic zinc silicate should also be approved on the current list of approved coatings for use on the exterior of ships listed on NAVSHIPS 9190 available from the Navy Ship Engineer Center, Washington, D.C., 20360. Apparently, some of the inorganic zinc silicates are difficult to touch up and/or repair and the above specifications list acceptable materials that should eliminate this problem.

do Lowe

(more)

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

6. Technical assistance (Page 50). It is also recommended that the paint supplier furnish the services of the technically qualified liaison man acceptable to the engineer and the manufacturer of the coating. He should recommend procedures for the coating and certify the system has been applied and cured satisfactorily.

done

7. Article 3.5.1.6 (Page 56). Remove the notation of specific equipment.

Do ✓done

8. Article 2.9 (Page 94). Can this series of propriety items be removed from the specifications without jeopardizing the ultimate system?

No

FAA approval as required

May we have your reply to our Washington office January 3, 1969 memorandum and the above comments.

7-note

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FEB 20 1969
OFFICE OF
STATE HIGHWAY ENGINEER

FORM FHWA-121A (2-68)

UNITED STATES GOVERNMENT

Memorandum

office copy

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

TO : Mr. R.M. Phillips, Regional Federal Highway Administrator
08-00.35 Portland, Oregon

DATE: January 3, 1969

In reply refer to:
32-42

FROM : G.M. Williams, Director of Engineering and Operations
By: W.J. Wilkes, Chief, Bridge Division, Washington, D.C.

SUBJECT: Oregon Project I-405-8(17)303 Fremont Bridge Superstructure

Reference is made to your memorandum of November 29, transmitting for our concurrent review a set of advance detail plans and the Special Provisions for the subject project.

We have examined the plans and the Special Provisions and offer the following comments for your consideration.

Superstructure Plans

Sheet 3 General Notes

Seismic Forces: Change the word "Structure" to read "Superstructure".

Material: Specifying types of A514 steel is the same as specifying proprietary steels and should not be done on F.A. projects.

Corrosion resistant material for High Strength bolts is not required and may result in some reduction in strength.

Reinforcing Steel: A minimum lap of 24 diameters is required for Grade 40 steel under AASHO 1.5.6(C)(2).

Sheet 7

Section H-H. move joint from ℄ Floor Beam to edge of flange on the side of the flexible stringer connection.

Sheet 44

Deck Joint C, same as above Sheet 7.

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Sheet 15

For Detail "A" and Detail "B", we recommend a change in design of the junction piece as shown on the accompanying sketch, three prints of which are enclosed. This design will permit the use of the same double "V" joint procedure at each end, with only the thickness as a difference. The weld can be completely inspected and readily repaired, as necessary, before the arch plate weld is made. By flaring the 46 x 1-3/4 plates to 66" width as shown, the material in the junction plate can be changed to the more easily machineable A588.

Sheet 29

We believe that the weld shown in Detail "A" will be made by an automatic process, such as the submerged arc, and the specified minimum penetration obtained without a bevel on the stiffener plate. We recommend that this detail be revised to eliminate the 50° bevel and show the edge of the stiffener plate as flush with the deck plate.

It is expected that the longitudinal welds in the deck plate will be field welded by the submerged arc or other automatic process. This will require the use of a single "V" weld joint on a backing strip. The backing strip must be continuous to avoid transverse cracks in the weld. The weld symbol at the center line of the deck should be revised to show these details.

Since the web plate and the bottom flange plate are ASTM A36 steel, pre-qualified AWS joint procedures can be used for the center line joints in these plates and the weld symbols should so indicate.

Special Provisions

The following revisions, listed by page number, should be made in the Special Provisions to make them conform to the recommendations in Enclosure "C" of the Circular Memorandum of August 19, 1966, entitled "Updating of Recommendations Relating to Welding, Electrodes, and Stud Shear Connectors:"

Page 24 - Under welding procedures for ASTM A514 steels, the permissible variation in welding current should be ± 10% from the qualification value.

Page 25 - In the first paragraph of (2)(a), delete the electrode designation E110XX. The specified drying procedure is required for all classes of electrodes used for welding ASTM A514 steel.

Page 26 - In the fourth paragraph of (2)(a), the minimum yield strength should be 97,000 psi.

Page 28 - In Figure II, the angle of the bend test should be 18° instead of 13°.

-more-

Sheet 15

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Page 28 - In Figure II, the angle of the bend test should be 18° instead of 13°.

-more-

Page 29 - In the second paragraph of "b", add the following after the penultimate sentence: "The training shall meet the approval of the engineer as adequate to result in a working knowledge of the procedures and a proficiency in the techniques of welding quenched and tempered steel."

Page 31 - In paragraph "e.", magnetic particle inspection of welds should include 100 percent of the welds specified instead of the 50 percent now shown.

We find no provisions for qualification of welding procedures for ASTM A588 steel. By paragraph 105(d) of the American Welding Society Specifications for Welded Highway and Railway Bridges, joint procedures are not prequalified for this type of steel and all such procedures must be established by qualification in accordance with Paragraph 502 of those specifications. We recommend, however, that once a contractor has qualified a particular procedure, he be allowed to continue to make use of this procedure without requalification, subject to the provisions of paragraphs 215, 216 and 217 of the AWS Specifications and the approval of the engineer.

Section 510-2.1 Aluminum (page 76)

1. Under Extruded Tube delete reference to ASTM B235 which was discontinued in 1963 and incorporated in ASTM B221. Refer to ASTM B221.

2. Delete GS11A-T6 and 990 A-o under ASTM Specs and substitute 6061-T6 and 1100 respectively. The latter are the correct ASTM designations.

3. Change column headed Aluminum Assoication Designation to Commercial Alloy Designation. The Aluminum Association has no system for designation casting alloys (A356-T61 and 356-T6). Delete 6061-T6 and 1100-0 from this column. (See 2 above).

Section 510-3.1.2d (page 79)

It is recommended that welding of Aluminum conform to Section 10, Fabrication of Welded Aluminum Structures, as specified in AASHO 1968 "Specifications For The Design and Construction of Structural Supports for Highway Signs".

Enclosures

RECEIVED
JAN 13 1969
FOR FILING

J 405-8(17)303
7276

January 10, 1969

AIRMAIL

Mr. Juhani Virola, Engineer
Tennispolku 4 A 8
Tapiola, Espoo
Suomi, Finland
NORTH EUROPE

Dear Mr. Virola:

With reference to your letter of December 31, the drawings I forwarded of the Fremont Bridge are firm and the length of the main span is 1,255'4". As I mentioned, contracts for the construction of the two approaches and the superstructure will be let during the coming year. Unless present plans change, the final contract should be let sometime in August.

Incidentally, your letter of December 25 addressed to the Chamber of Commerce, Fremont, Oregon, was forwarded to me for reply. Fremont is an arterial street in Portland with which the east approach of the bridge will connect. The material requested in your letter was contained in my letter of December 26.

Sincerely,

Forrest Cooper
State Highway Engineer

By

John J. Earley
Public Information Officer

JJEmo

cc Victor D. Wolfe

Telford's Menai Strait Bridge, finished in 1826, has a suspended span of 580 ft. In the distance is Stephenson's tubular railroad bridge.

The world's greatest bridges

JUHANI VIROLA,
Engineer, Tapiola, Finland

Great structures are always a challenge to engineers. Within types, length is a measure of relative standing; bridges are listed here in order of length of main span. Mr. Virola's material has been supplemented with data supplied by David T. Evans of the American Institute of Steel Construction and from CIVIL ENGINEERING files. Simple truss and movable steel bridges have not had spectacular changes so these are not included here. Nor are bridges that are no longer standing.

Bridge designers are reaching for more distant shores—frequently with longer spans—to meet the ever increasing demands of transportation of people and goods. Esthetics is currently being given attention as an affluent society seeks to improve travel facilities.

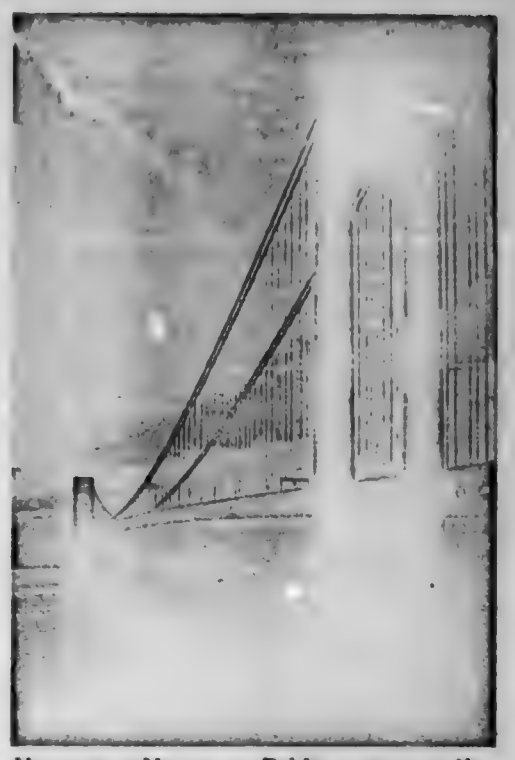
Cable-stayed structures, more suitable than conventional suspension bridges for spans up to perhaps 1,640 ft (500 m) have been developed in West Germany in the past 15 years. The longest span in service is 990 ft (302 m) for the Severin Bridge in Cologne, completed in 1959. The record length moves soon to a 1,148-ft (350-m) span for a bridge under construction at Duisburg, West Germany. Continuous plate and box girders, many with orthotropic decks, have reached record lengths. The San Mateo-Hayward Bridge over an arm of San Francisco Bay has spans of 375-750-375 ft with a girder depth of 30 ft at the piers and 15 ft at midspan. But the 856-ft-span girder over the Sava River at Belgrade, Yugoslavia, has been the record span of this type since 1956. Two great steel arch bridges, the Bayonne Bridge (1,652 ft; 504 m) and the Sydney Harbor Bridge (1,650 ft; 503 m) were built in the 1930's and are still the largest in their class. Since 1917 not one cantilever bridge has been built with a span of 1,640 ft (500 m) or longer, but construction is to start soon on the longest cantilever bridge in the U.S. (third longest in the world)—1,644 ft for a span over the Delaware at Chester, Pa. A notable continuous truss bridge over the Columbia River, with a record span of 1,232 ft (376 m), was completed in 1966 at Astoria, Ore.

The longest bridges in the world are of concrete. A good example is the 24-mile-long Lake Ponchartrain Twin Bridge in Louisiana, completed in 1956 and the second bridge to be completed in 1969. But with the exception of a concrete arch bridge in Australia (see Table VI), concrete bridges built to this day do not have span lengths exceeding 1,000 ft (305 m).

Conventional suspension bridges, however, hold all records for greatest spans and probably will continue to do so for the foreseeable future. Currently a suspension bridge over the Bosporus at Istanbul is being designed with a main span of 3,609 ft (1,100 m). A bridge across Akashi Straits connecting the Japanese islands of Honshu and Awaji at Kobe is proposed, with a span a little greater than the 4,260 ft of the Verrazano-Narrows Bridge in New York.

A main span of 4,580 ft, with side spans substantially different—920 and 1,395 ft—is proposed for the Humber Estuary in England. Several years ago D. B. Steinman made preliminary plans for a railway and highway bridge with a main span of 5,000 ft over Messina Straits between Italy and Sicily. The crossing is needed and the bridge idea is frequently revived.

Salazar Bridge across the Tagus at Lisbon has the longest span, 3,323 ft, (1,013 m) of any outside the United States.



Verrazano-Narrows Bridge across the entrance to New York harbor has the longest main span of any bridge in the world—4,260 ft (1,298 m).

A fantastic plan for a suspension bridge with seven spans of about 10,000 ft (3,000 m) each has been suggested across the Straits of Gibraltar from Spain to Africa; the concept has not received much support.

Since the early 19th century, suspension bridges have usually held the span record: Menai Straits, Wales, (1826) has a span of 580 ft; a bridge over the Ohio at Wheeling, W. Va., (1849) spans 1,008.5 ft; a Roebling bridge at Cincinnati, Ohio, (1867) has a 1,057-ft span; and the Brooklyn Bridge (1883) spans 1,595.5 ft.

Cantilever structures, with long suspended sections, took the lead with completion in 1890 of the tubular steel railroad bridge over the Firth of Forth near Edinburgh, Scotland. Its two spans are 1,710 ft each. The famed but unfortunate Quebec Bridge with a center span of 1,800 ft was completed in 1917 after 13 years in construction and two major failures. This was the record span length until the Ambassador bridge with an 1,850-ft span was opened in 1929 between Detroit, Mich., and Windsor, Ont., returning the record for long spans to suspension structures.

Brooklyn Bridge, in New York City, has a span of 1,595.5 ft (486 m) and was completed by the Roeblings in 1883.

Two years later, in 1931, the George Washington Bridge was completed across the Hudson River in New York, with a span of 3,500 ft. This structure almost doubled the previously built maximum span and was perhaps the greatest single extension of span length ever made. Next came the Golden Gate Bridge in 1937 with a span of 4,200 ft across the entrance of San Francisco Bay. This record span length stood until 1964 when the Verrazano-Narrows Bridge over the entrance to New York harbor was completed with a span of 4,260 ft.

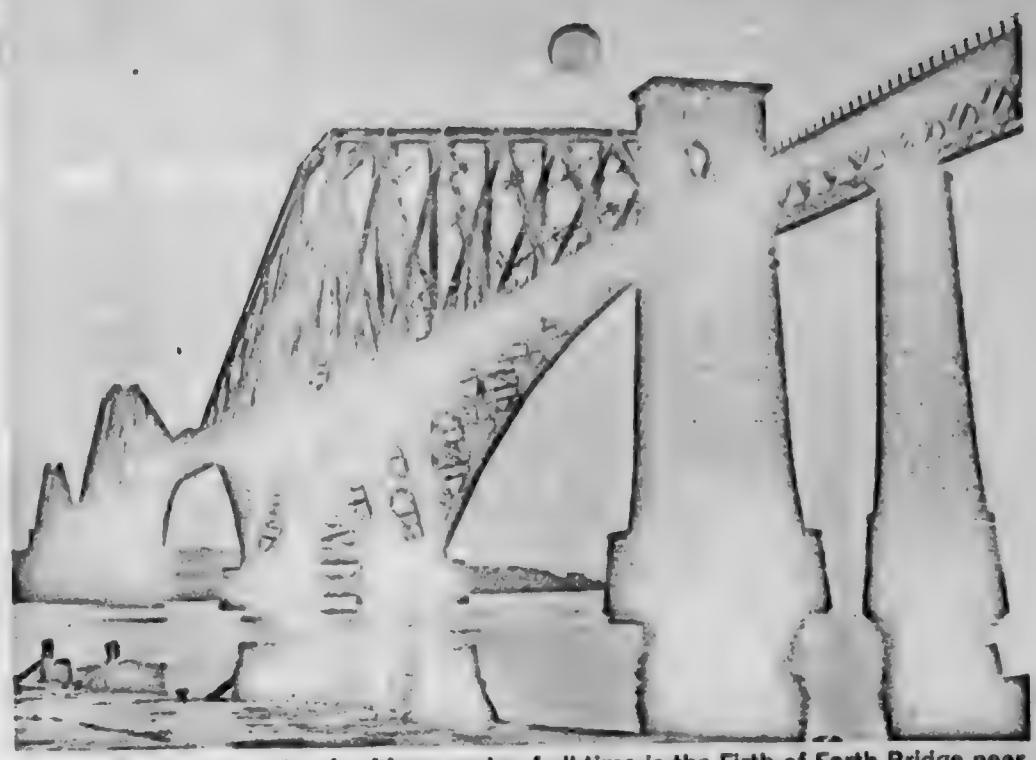
The Mackinac Bridge in Michigan, 1957, has a main span of 3,800 ft but, with long side spans, claims the greatest suspended length, 7,400 ft, and greatest length between anchorages of any suspension bridge, 8,344 ft.

The U.S. has the four longest suspension bridges but the next three are in Europe. First completed among these in 1964 is the Forth Road Bridge in Scotland near the Firth of

Forth railway bridge. The former's span of 3,300 ft makes it a little shorter than the Salazar Bridge, 3,323 ft, at Lisbon, Portugal, completed in 1966. The Salazar Bridge is designed to carry double tracks for a railroad on its lower deck by addition of diagonal cables from the tower to points along the deck. The changes can be made without delaying highway traffic.

A bridge over the Severn River in England completed in 1966 has a suspended span of 3,240 ft. Instead of the conventional vertical suspenders and stiffening trusses this bridge has inclined suspenders supporting a streamlined hollow-box deck structure 10 ft deep, which has proved stable in wind tunnel tests and in service. It is estimated that 20 percent less steel was used than for other designs. A bridge under construction across the Little Belt in Denmark, with a 1,969-ft span, will have this type of deck but will also have vertical suspenders.

Tables give statistics on several types of bridges.



Among the great structural achievements of all time is the Firth of Forth Bridge near Edinburgh, Scotland. Of tubular construction, its two 1,710-ft spans held the world record for length from 1890 until the Quebec Bridge with a span of 1,800 ft was completed in 1917. It held second place until the Benjamin Franklin Bridge at Philadelphia, with a span of 1,750 ft, was completed in 1926. All these records were eclipsed by the George Washington Bridge's 3,500-ft span in 1931 and the Golden Gate Bridge's 4,200-ft span, in 1937.

TABLE I. The Leading Suspension Bridges

Bridge	Main Span Completion Meters	Feet	Date	Location
1. Verrazano Narrows	1,298	4,260	1964	New York, N.Y., USA
2. Golden Gate	1,280	4,200	1937	San Francisco, Calif., USA
3. Mackinac Straits	1,158	3,800	1957	Mackinaw City, Mich., USA
4. George Washington	1,067	3,500	1931	New York, N.Y., USA
5. Salazar	1,013	3,323	1966	Lisbon, Portugal
6. Forth Road	1,006	3,300	1964	Queensferry, Scotland
7. Severn	988	3,240	1966	Beachley, England
8. Tacoma Narrows II	853	2,800	1950	Puget Sound, Wash., USA
9. Kanmon Straits	712	2,336	1973	Kyushu-Honshu, Japan
10. Angostura	712	2,335	1967	Ciudad Bolivar, Venezuela
11. Transbay (2 spans)	704	2,310	1936	San Francisco, Calif., USA
12. Bronx-Whitestone	701	2,300	1939	New York, N.Y., USA
13. Quebec Road	668	2,190	1970	Quebec, Canada
14. Delaware Memorial I & II	655	2,150	1951 & 1968	Wilmington, Del., USA
15. Walt Whitman	610	2,000	1957	Philadelphia, Pa., USA
16. Tancarville	608	1,995	1959	Seine River, France
17. Little Belt	600	1,969	1970	Middelfart, Denmark
18. Ambassador International	564	1,850	1929	Detroit, Mich., USA
19. Throgs Neck	549	1,800	1961	New York, N.Y., USA
20. Benjamin Franklin	533	1,750	1926	Philadelphia, Pa., USA
21. Skjomen	525	1,722	1971	Nordland, Norway
22. Emmerich	500	1,640	1965	Rhine River, W. Germany
23. Bear Mountain	497	1,632	1924	Peekskill, N.Y., USA
24. Williamsburg	488	1,600	1903	New York, N.Y., USA
25. Chesapeake Bay	488	1,600	1952	Sandy Point, Md., USA
26. Newport	488	1,600	1969	Narragansett Bay, R.I., USA
27. Brooklyn	486	1,595.5	1883	New York, N.Y., USA

TABLE II. The Leading Cantilever Bridges

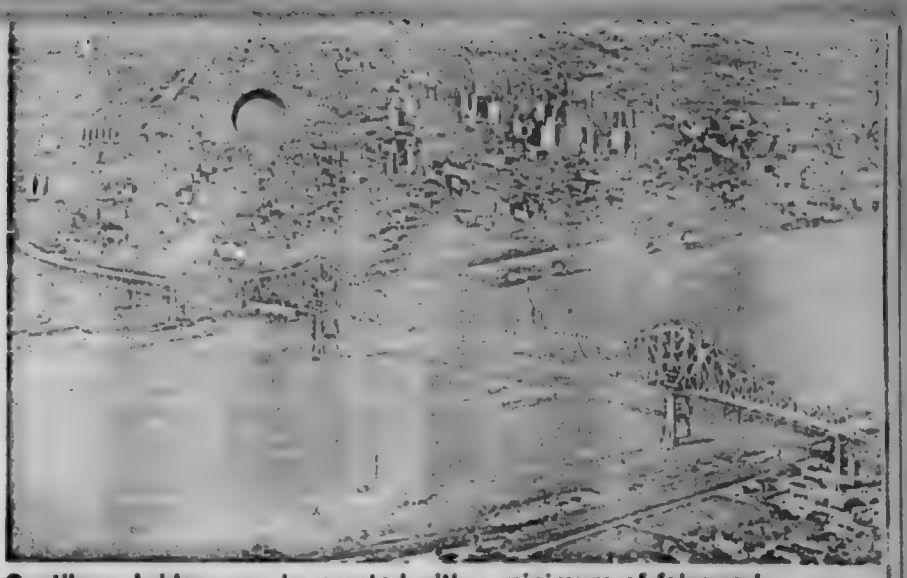
Bridge	Span Meters	Feet	Completion Date	Location
1. Quebec (Railway)	549	1,800	1917	Quebec, Canada
2. Forth (Railway)	2@521	2@1,700	1890	Queenferry, Scotland
3. Delaware River	501	1,644	1971	Chester, Pa.-Bridgeport, N.J., USA
4. Greater New Orleans	480	1,575	1958	New Orleans, La., USA
5. Howrah	457	1,500	1943	Calcutta, India
6. Transbay	427	1,400	1936	San Francisco, Calif., USA
7. Baton Rouge	376	1,235	1968	Baton Rouge, La., USA
8. Tappan Zee	369	1,212	1955	Tarrytown, N.Y., USA
9. Longview	366	1,200	1930	Columbia River, Wash., USA
10. Queensboro	360	1,182	1909	New York, N.Y., USA

TABLE III. The Leading Steel Arch Bridges

Bridge	Span Meters	Feet	Completion Date	Location
1. Bayonne (Kill Van Kull)	504	1,652	1931	New York, N.Y., USA
2. Sydney Harbor	503	1,650	1932	Sydney, Australia
3. Port Mann	366	1,200	1964	British Columbia, Canada
4. Thatcher	344	1,128	1962	Panama Canal, Panama
5. Trois-Rivieres	335	1,100	1967	St. Lawrence River, Canada
6. Zdakov	330	1,083	1967	Vltava River, Czechoslovakia
7. Runcorn-Widnes	330	1,082	1961	Mersey River, England
8. Birchenough	329	1,080	1935	Sabi River, South Rhodesia
9. Glen Canyon	313	1,028	1959	Colorado River, Ariz., USA
10. Lewiston-Queenston	305	1,000	1962	Niagara River, USA-Canada

TABLE IV. The Leading Continuous Truss Bridges

Bridge	Span Meters	Span Feet	Completion Date	Location
1. Astoria	376	1,232	1966	Columbia Riv., Ore., USA
2. Tenmon	300	984	1966	Kumamoto, Japan
3. Dubuque	258	845	1943	Mississippi Riv., Iowa, USA
4. Somerset	256	840	1964	Taunton Riv., Mass., USA
5. Brent Spence	253	831	1963	Ohio River, Ohio, USA
6. Earle S. Clements	251	825	1956	Shawneetown, Ill., USA
7. Mathews	247	810	1953	Jacksonville, Fla., USA
8. St. Louis	245	804	1944	Mississippi Riv., Mo., USA
9. Kingston-Rhinecliff	244	800	1957	Hudson Riv., N.Y., USA
10. Sherman Minton	244	800	1961	New Albany, Ind., USA



Cantilever bridges can be erected with a minimum of falsework. Here the 1,575-ft main span of the Greater New Orleans Bridge approaches closure in 1958. It will remain the third longest of this type in the world until completion of the Delaware River Bridge in 1971.

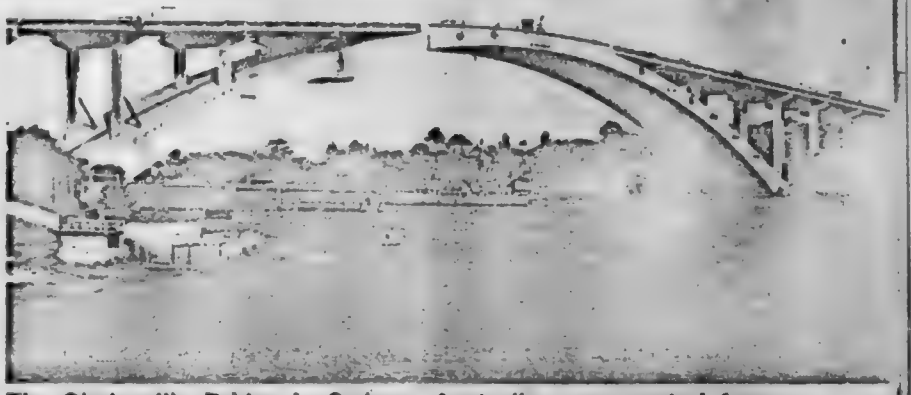
TABLE V. The Leading Cable-Stayed Bridges

Bridge	Span Meters	Span Feet	Completion Date	Location
1. Duisburg-Neuenkamp	350	1,148	1970	Duisburg, W. Germany
2. Mesopotamia	340	1,116	1972	Corrientes, Argentina
3. Lower Yarra	336	1,102	1970	Melbourne, Australia
4. "Kniebrucke"	320	1,050	1969	Dusseldorf, W. Germany
5. Erskine	305	1,000	1970	Clyde River, Scotland
6. Bratislava	303	994	1971	Danube River, Czechoslovakia
7. Severin	302	990	1959	Cologne, W. Germany
8. Mannheim-Nord	290	951	1969	Mannheim, W. Germany
9. Wadi Kuf*	286	938	1969	Libya, Africa
10. Leverkusen	280	919	1965	Leverkusen, W. Germany
Friedrich Ebert	280	919	1967	Bonn, W. Germany

*A Concrete Bridge

TABLE VI. The Leading Concrete Arch Bridges

Bridge	Span Meters	Span Feet	Completion Date	Location
1. Gladesville	305	1,000	1964	Sydney, Australia
2. Foz do Iguassu	290	951	1964	Parana River, Brazil-Paraguay
3. Arrabida	270	886	1963	Porto, Portugal
4. Sando	264	866	1943	Angerman River, Sweden
5. Shibenik	246	808	1967	Krka River, Yugoslavia
6. Fiumarella	231	758	1961	Catanzaro, Italy
7. Novi Sad	211	692	1961	Danube River, Yugoslavia
8. Lingenau	210	689	1967	Bregenz, Austria
9. Van Stadens Gorge	198	650	1970	Port Elizabeth, South Africa
10. Martin Gil	192	631	1942	Andavias, Spain



The Gladesville Bridge in Sydney, Australia, was erected from precast boxes and posttensioned into a 1,000-ft concrete arch, longest of its class in the world. Under it can be seen the 1,650-ft steel arch over Sydney Harbor, which is only 2 ft short of the world's record for such structures.

TABLE VII. Continuous Plate and Box Girder Bridges

Bridge	Main Spans	Completion Date	Location
1. Sava I	75-261-75 m 246-856-246 ft	1956	Belgrade, Yugoslavia
2. Zoobrucke	74-259-145 m 241-850-474 ft	1966	Cologne, W. Germany
3. Sava II	42-250-40 m 127-820-123 ft	1970	Belgrade, Yugoslavia
4. Bonn-Sud	125-230-125 m 410-755-410 ft	1971	Bonn, W. Germany
5. San Mateo-Hayward	114-229-114 m 375-750-375 ft	1967	San Francisco, Calif., USA
6. Dusseldorf-Neuss	103-206-103 m 338-675-338 ft	1951	W. Germany
7. Schierstein	85-205-85 m 279-673-279 ft	1962	Wiesbaden, W. Germany
8. Weisenau	74-204-134 m 242-669-438 ft	1961	Mainz, W. Germany
9. San Diego-Coronado	201-201-171 m 660-660-560 ft	1969	San Diego, Calif., USA
10. Europe	108-198-108 m 354-650-354 ft	1963	Sill River, Austria

Unusual methods of construction are used to extend plate girder bridges such as Poplar Street Bridge in St. Louis with spans of 500-600-500 ft. At left is the Gateway Arch rising to a height of 630 ft.

Tapiola, 31 Dec. 1968

Mr. John J. EARLEY, Public Information Officer
Oregon State Highway Department
Highway Building
Salem, Oregon 97310
USA

Dear Sir,

Thanks for your letter of Dec. 26 with the information material on the Fremont Bridge.

My table "World's longest bridges" is not yet ready and some new bridges, such as the Second Sunshine Skyway, 6819 m, 1969, St. Petersburg-Palmetto, Fla.,USA, and the new Nanking Bridge, ca. 6700 m, ~~Yangtse~~ 1968, Yangtse River, China, will push ~~him~~ your Astoria Bridge downwards in my table, but it will still be among the top 20 bridges. When my list is ready , I aim to publish it for instance in the Engineering News-Record.

For my present purposes, to get reprints from my article in the Civil Engineering 10-1968, I should primarily need the most likely main span length of ~~it~~ the Fremont Bridge. Concluding from the fact the the foundations are under construction, I would think that the main span length is now fixed. Wondering if I can safely take 1255'4". Parsons, Brinkerhoff, Quade & Douglas, some weeks ago advised me a length of 1275'. Could it be possible that the main span length ~~is~~ is not yet fixed?

Later on I should be willing to write articles on this bridge and shall return to this matter in August 1969. I should then write article for a Finnish journal TIEMIES and later on for an international review ACIER/STAHL/STEEL. Under a separate cover, via surface mail, I am sending you ~~copies~~ copy of my article on the new Baton Rouge Bridge, Louisiana, appearing in the ACIER/STAHL/STEEL 11-1968.

Yours very faithfully,

Juhani Virola

Juhani VIROLA, Engineer
Tennispolku 4 A 3
Tapiola, Espoo
SUOMI/Finland

Enclosure (under a separate cover)

Rec'd 1-6-69.
P.I. Office

Tapiola, 25 Dec. 1968

.3251

Chamber of Commerce
Fremont, Oregon
USA

REFERRED TO
Wolfe
BY DEPUTY STATE HIGHWAY ENGINEER

Dear Sirs,

I am writing articles on large bridges for various technical magazines and am therefore gathering data all over the world. A good example is my recent 4-page article "World's greatest bridges" in the Oct. 1968 issue of the Civil Engineering-ASCE. I shall soon take reprints from this article.

I have heard of a large steel arch bridge, main span 1275' (3rd largest in the world), now under construction at Fremont over the Willamette River. I wonder if you could kindly by air letter either confirm or correct this assumption, for the above purpose for reprints. Please kindly inform me also the expected completion year. I would be most obliged if you could kindly furnish me with some information material on the bridge, willingly a good longitudinal profile. In the case that you have at hand no such material, could you kindly contact the consulting engineers, who designed the bridge.? Thank you very much.

Por fav

Waiting your kind answer at
your earliest convenience,

Yours very faithfully,

Juhani Virola

Juhani VIROLA, Engineer
Tennispolku 4 A 3
Tapiola, Espoo
SUOMI/Finland
North Europe

RECEIVED
JAN 8 1969
OFFICE OF
STATE HIGHWAY ENGINEER

Rec'd 1-9-69
P.D. Office

Tapiola, 31 Dec. 1968

Mr. John J. EARLEY, Public Information Officer
Oregon State Highway Department
Highway Building
Salem, Oregon 97310
USA

Dear Sir,

Thanks for your letter of Dec. 26 with the information material on the Fremont Bridge.

My table "World's longest bridges" is not yet ready and some new bridges, such as the Second Sunshine Skyway, 6819 m, 1969, St. Petersburg-Palmetto, Fla., USA, and the new Nanking Bridge, ca. 6700 m, ~~Yangtse~~ 1968, Yangtse River, China, will push ~~him~~ your Astoria Bridge downwards in my table, but it will still be among the top 20 bridges. When my list is ready , I aim to publish it for instance in the Engineering News-Record.

For my present purposes, to get reprints from my article in the Civil Engineering 10-1968, I should primarily need the most likely main span length of ~~it~~ the Fremont Bridge. Concluding from the fact the the foundations are under construction, I would think that the main span length is now fixed. Wondering if I can safely take 1255'4". Parsons, Brinkerhoff, Quade & Douglas, some weeks ago advised me a length of 1275'. Could it be possible that the main span length ~~is~~ is not yet fixed?

Later on I should be willing to write articles on this bridge and shall return to this matter in August 1969. I should then write article for a Finnish journal TIEMIES and later on for an international review ACIER/STAHL/STEEL. Under a separate cover, via surface mail, I am sending you ~~copies~~ copy of my article on the new Baton Rouge Bridge, Louisiana, appearing in the ACIER/STAHL/STEEL 11-1968.

Yours very faithfully,

Juhani Virola

Juhani VIROLA, Engineer
Tennispolku 4 A 3
Tapiola, Espoo
SUOMI/Finland

Enclosure (under a separate cover)

Rec'd 1-6-69.
P. I. Office

ILMAKIRJE
AEROGRAM

TAMPERE 31 12 62 -9. 3

0,40 SUOMI FINLAND

Mr. John J. EARLEY, Public Information officer
Oregon State Highway Department
Highway Building
Salem, Oregon 97310
U.S.A.

PAR AVION
LENTOPOSTI
FLYGPOST

LOPUKSI TAITETAAN TÄSTÄ — VIKES TILL SIST HÄR

LÄHETTÄJÄ — AVSÄNDARE

Sender: J. Virola
Tennispolku 4
Tapiola, Finland

KULJETETAAN LISÄMAKSUTTA KAIKKIIN MAIHIN. EI KULJETETA ILMAKIRJEENÄ, JOS JOTAKIN PANNAAN KIRJEEN SISÄÄN.

BEFORDRAS UTAN TILLÄGGSAVGIFT ÖVER HELA VÄRLDEN. BEFORDRAS ICKE SOM AEROGRAM, OM NÅGOT LÄGGES INUTI.

MYYNTIHINTA mk 0,45 FÖRSÄLJNINGSPRIS

AVATAAN TÄSTÄ — ÖPPNAS HÄR

TAITETAAN TÄSTÄ — VIKES HÄR

TAITETAAN TÄSTÄ — VIKES HÄR

Tapiola, 25 Dec. 1968

3251

Chamber of Commerce
Fremont, Oregon
USA

REFERRED TO
Wolfe
BY DEPUTY STATE HIGHWAY ENGINEER

Dear Sirs,

I am writing articles on large bridges for various technical magazines and am therefore gathering data all over the world. A good example is my recent 4-page article "World's greatest bridges" in the Oct. 1968 issue of the Civil Engineering-ASCE. I shall soon take reprints from this article.

I have heard of a large steel arch bridge, main span 1275' (3rd largest in the world), now under construction at Fremont over the Willamette River. I wonder if you could kindly by air letter either confirm or correct this assumption, for the above purpose for reprints. Please kindly inform me also the expected completion year. I would be most obliged if you could kindly furnish me with some information material on the bridge, willingly a good longitudinal profile. In the case that you have at hand no such material, could you kindly contact the consulting engineers, who designed the bridge.? Thank you very much.

Por 744

Waiting your kind answer at
your earliest convenience,

Yours very faithfully,

Juhani Virola

Juhani VIROLA, Engineer
Tennispolku 4 A 3
Tapiola, Espoo
SUOMI/Finland
North Europe

RECEIVED
JAN 8 1969
OFFICE OF
STATE HIGHWAY ENGINEER

Rec'd 1-9-69
P.D. Office

ILMAKIRJE
AEROGRAM

HELSINKI
26 12 68 21

0,40
SUOMI FINLAND

Chamber of Commerce

Fremont, Oregon
(or any other town near the Willamette River)

PAR AVION
LENTOPOSTI
FLYGPOST

U.S.A.

LOPUKSI TAITETAAN TÄSTÄ — VIKES TILL SIST HÄR

TAITETAAN TÄSTÄ — VIKES HÄR

LÄHETTÄJÄ — AVSÄNDARE

Sender: J. Virsa
Tennispolku 4
Tapiola, Finland

KULJETETAAN LISÄMAKSUTTA KAIKKIIN MAIHIN. EI KULJETETA ILMAKIRJEENÄ, JOS JOTAKIN PANNAAN KIRJEEN SISÄÄN.

BEFORDRAS UTAN TILLÄGGSAVGIFT ÖVER HELA VÄRLDEN. BEFORDRAS ICKE SOM AEROGRAM, OM NÅGOT LÄGGES INUTI.

MYYNTIHINTA mk 0.45 FÖRSÄLJNINGSPRIS

AVATAAN TÄSTÄ — ÖPPNAS HÄR

TAITETAAN TÄSTÄ — VIKES HÄR

RECEIVED
JAN 10 1969

FORM DOT-1320-1A (2-68)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

I-405-8(17)303

7276

TO: 08-00.35 Mr. R.M. Phillips, Regional Federal Highway Administrator, Portland, Oregon

DATE: January 3, 1969

In reply refer to: 32-42

FROM : G.M. Williams, Director of Engineering and Operations
By: W.J. Wilkes, Chief, Bridge Division, Washington, D.C.

SUBJECT: Oregon Project I-405-8(17)303 Fremont Bridge Superstructure

Reference is made to your memorandum of November 29, transmitting for our concurrent review a set of advance detail plans and the Special Provisions for the subject project.

We have examined the plans and the Special Provisions and offer the following comments for your consideration.

Superstructure Plans

Sheet 3 General Notes

Seismic Forces: Change the word "Structure" to read "Superstructure".

Material: Specifying types of A514 steel is the same as specifying proprietary steels and should not be done on F.A. projects.

Corrosion resistant material for High Strength bolts is not required and may result in some reduction in strength.

Reinforcing Steel: A minimum lap of 24 diameters is required for Grade 40 steel under AASHO 1.5.6(C)(2).

Copy - memo sent 1-10-69

Sheet 7

Section H-H. move joint from ℄ Floor Beam to edge of flange on the side of the flexible stringer connection.

Sheet 44

NOTED
TOM EDWARDS

Deck Joint C, same as above Sheet 7.

-more-

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

Sheet 15

For Detail "A" and Detail "B", we recommend a change in design of the junction piece as shown on the accompanying sketch, three prints of which are enclosed. This design will permit the use of the same double "V" joint procedure at each end, with only the thickness as a difference. The weld can be completely inspected and readily repaired, as necessary, before the arch plate weld is made. By flaring the 46 x 1-3/4 plates to 66" width as shown, the material in the junction plate can be changed to the more easily machineable A588.

Sheet 29

We believe that the weld shown in Detail "A" will be made by an automatic process, such as the submerged arc, and the specified minimum penetration obtained without a bevel on the stiffener plate. We recommend that this detail be revised to eliminate the 50 bevel and show the edge of the stiffener plate as flush with the deck plate.

It is expected that the longitudinal welds in the deck plate will be field welded by the submerged arc or other automatic process. This will require the use of a single "V" weld joint on a backing strip. The backing strip must be continuous to avoid transverse cracks in the weld. The weld symbol at the center line of the deck should be revised to show these details.

Since the web plate and the bottom flange plate are ASTM A36 steel, pre-qualified AWS joint procedures can be used for the center line joints in these plates and the weld symbols should so indicate.

Special Provisions

The following revisions, listed by page number, should be made in the Special Provisions to make them conform to the recommendations in Enclosure "C" of the Circular Memorandum of August 19, 1966, entitled "Updating of Recommendations Relating to Welding, Electrodes, and Stud Shear Connectors:"

Page 24 - Under welding procedures for ASTM A514 steels, the permissible variation in welding current should be $\pm$ 10% from the qualification value.

Page 25 - In the first paragraph of (2)(a), delete the electrode designation E110XX. The specified drying procedure is required for all classes of electrodes used for welding ASTM A514 steel.

Page 26 - In the fourth paragraph of (2)(a), the minimum yield strength should be 97,000 psi.

Page 28 - In Figure II, the angle of the bend test should be 18° instead of 13°.

-more-

Page 29 - In the second paragraph of "b", add the following after the penultimate sentence: "The training shall meet the approval of the engineer as adequate to result in a working knowledge of the procedures and a proficiency in the techniques of welding quenched and tempered steel."

Page 31 - In paragraph "e.", magnetic particle inspection of welds should include 100 percent of the welds specified instead of the 50 percent now shown.

We find no provisions for qualification of welding procedures for ASTM A588 steel. By paragraph 105(d) of the American Welding Society Specifications for Welded Highway and Railway Bridges, joint procedures are not prequalified for this type of steel and all such procedures must be established by qualification in accordance with Paragraph 502 of those specifications. We recommend, however, that once a contractor has qualified a particular procedure, he be allowed to continue to make use of this procedure without requalification, subject to the provisions of paragraphs 215, 216 and 217 of the AWS Specifications and the approval of the engineer.

Section 510-2.1 Aluminum (page 76).

1. Under Extruded Tube delete reference to ASTM B235 which was discontinued in 1963 and incorporated in ASTM B221. Refer to ASTM B221.

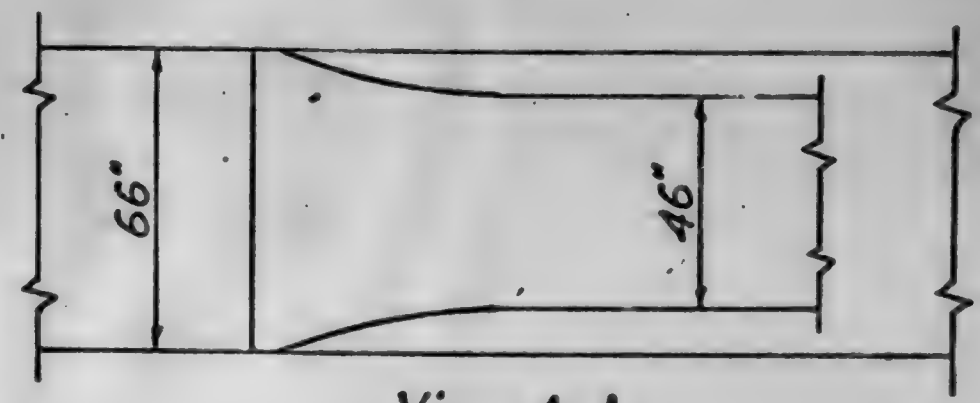
2. Delete GS11A-T6 and 990 A-o under ASTM Specs and substitute 6061-T6 and 1100 respectively. The latter are the correct ASTM designations.

3. Change column headed Aluminum Assoication Designation to Commercial Alloy Designation. The Aluminum Association has no system for designation casting alloys (A356-T61 and 356-T6). Delete 6061-T6 and 1100-0 from this column. (See 2 above).

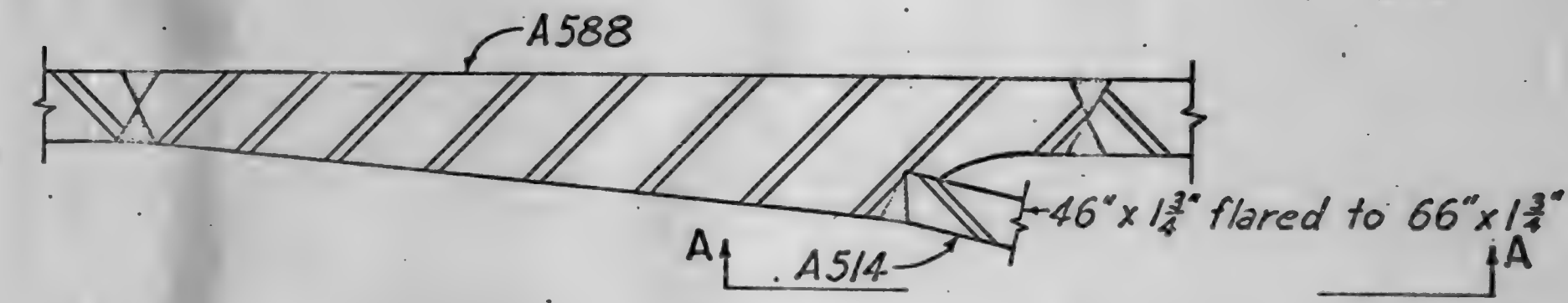
Section 510-3.1.2d (page 79)

It is recommended that welding of Aluminum conform to Section 10, Fabrication of Welded Aluminum Structures, as specified in AASHO 1968 "Specifications For The Design and Construction of Structural Supports for Highway Signs".

Enclosures



View A-A



Suggested Revision of Details 'A' & 'B'
Truss Details - P.P.3, Sht. 15
Ore. I-405-8(17)303 - Fremont Bridge

RECEIVED
SEP 24 1968
FOR FILING

I-405-8(17)313
7276

September 23, 1968

AIRMAIL
The Honorable Wendell Wyatt
United States Representative
Longworth House Office Building
Washington, D. C. 20515

Dear Mr. Wyatt:

Reference is made to your recent note enclosing a letter from Mr. W. P. Gerber concerning the effect of the recent cutback on the Fremont Bridge.

There is no question but that Mr. Gerber has just cause for concern. We are concerned also. While we still do not know what effect the recent additional $200 million cutback will have on our future program because the rules of the game after the moratorium is lifted have not been announced, it could conceivably delay work on the bridge as much as six months or more. The cost to the motorist in lost time and increased distance due to not having this vital link is estimated to be $3,825 per day. The theoretical loss may therefore be in excess of $675,000.

As outlined in my letter to you and to all other members of the Oregon congressional delegation dated September 23, this latest action by the Administration makes orderly planning and programming almost impossible.

If we can be of any further assistance, please advise.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

F. B. Klabee
Assistant State Highway Engineer

cc: Forrest Cooper
R. L. Porter
Tom Edwards
Victor D. Wolfe

FBK:srb

TEL. 235-1643

LAW OFFICES OF
WALTER P. GERBER
2130 N. E. COUCH STREET
PORTLAND, OREGON 97232

Sep. 11, 1968

Rep. Wendell Wyatt
House of Representatives
Washington, D.C.

Dear Mr. Wyatt:

I read that the work on the Fremont Bridge in Portland is to be delayed; what a bitter disappointmmmt this is to many in Portland who are caught in the traffic tangle which this bridge is supposed to correct.

Just to be caught in the traffic mess in northwest Portland between the hours of 4 to 6 PM is madenning, and is worse to those who work there and have no choice but to buck the terrific congestion each day.

In my opinion, such work should not be delayed, but it should be speeded up regardless. Do you have any influence in this regard, and can you be of assistance. It seems like Oregon gets it in the neck regularly, and this is just another example of it.

Best regards, and I like to hear your voice in Congress; it should be louder, and perhaps it will.

Very truly yours,

W. P. Gerber

w:G

RECEIVED
SEP 19 1968
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
SEP 24 1968
FOR FILING
I-405-8(17) 303
7276

September 23, 1968

AIRMAIL
The Honorable Wayne Morse
United States Senator
Old Senate Office Building
Washington, D. C. 20510

Dear Senator Morse:

Reference is made to your recent note enclosing a letter from Mr. W. P. Gerber concerning the effect of the recent cutback on the Fremont Bridge.

There is no question but that Mr. Gerber has just cause for concern. We are concerned also. While we still do not know what effect the recent additional $200 million cutback will have on our future program because the rules of the game after the moratorium is lifted have not been announced, it could conceivably delay work on the bridge as much as six months or more. The cost to the motorist in lost time and increased distance due to not having this vital link is estimated to be $3,825 per day. The theoretical loss may therefore be in excess of $675,000.

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If we can be of any further assistance, please advise.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

F. B. Klaboe
Assistant State Highway Engineer

cc: Forrest Cooper
R. L. Porter
Tom Edwards
Victor D. Wolfe

FBK:srb

TEL. 235-1643

LAW OFFICES OF
WALTER P. GERBER
2130 N. E. COUCH STREET
PORTLAND, OREGON 97232

SEP 14 1968

Sep. 11, 1968

Senator Wayne Morse
Senate Office Building
Washington, D.C.

Dear Senator:

I read that the work on the Fremont Bridge in Portland is to be delayed; what a bitter disappointment!

Just to be caught in the traffic mess in that area between the hours of 4 to 6 PM is maddening, and it must be most frustrating to those unfortunates who regularly work and must drive through there.

I know of no congestion in Portland worse than in this area, and the completion of this bridge has been looked to for relief for so long, that such work should not be delayed; in fact, it should be speeded up.

Do you have any influence in this regard, and can you be of assistance? The people of Portland will be most appreciative if you can help.

Very truly yours,

W. P. Gerber

w:G

TEL. 235-1643

LAW OFFICES OF
WALTER P. GERBER
2130 N. E. COUCH STREET
PORTLAND, OREGON 97232

SEP 1 8 1968

Sep. 11, 1968

Senator Morse
Senate Office Building
Washington, D.C.

Dear Senator:

PS to me letter this date about objections to the delay in the construction of the new Fremont Bridge in Portland:

The money for road construction comes from the gasoline taxes, which are still rolling in at the usual rate or better. So, why reduce such construction? The reductions should be made elsewhere.

Very truly yours,

W. P. Gerber

w:G

RECEIVED
SEP 25 1968
FOR FILING

I.405-8(17) 303
I-7276

OREGON STATE HIGHWAY DEPARTMENT
INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
September 23, 1968

SUBJECT:

To: Mr. Ivan Merchant
Bridge Engineer

Before the matter gets any further out of hand, I wish to advise you that the Fremont Bridge will be constructed in four contracts -- the piers, the main span, the east approach and the west approach.

On each of these projects there will be a responsible resident engineer having authority on his specific project only. There will be no overall super resident engineer on this project having to do with control of the entire operation. This shall be done through the normal administrative channel.

The matter of rate for the specific resident engineers is being discussed by the Department, not as a single item for this project but rather as a departmental policy for large projects.

Tom Edwards
Assistant State Highway Engineer

TE:ja

cc Forrest Cooper
R. L. Porter
F. B. Klaboe
Lloyd Shaw
Victor D. Wolfe
Gene Huntley
L. W. Rulien

al Johnson
9-24-68

NOTED
F.B. KLABOE

RECEIVED
AUG 22 1968

I-405-8(17)303
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon 97310
August 21, 1968

SUBJECT: External Lighting
Fremont Bridge

To: Tom Edwards
Assistant State Highway Engineer
B U I L D I N G

As you requested, we have investigated various possible commercially available methods for providing illumination for the Fremont Bridge structure that would delineate its architectural features. The availability of the commercial equipment was discussed with several members of the lighting industry.

It was generally agreed by all concerned that mounting of lighting units on or near any arch and projecting the light beam along the arch would not produce satisfactory results. The uniformity would be spotty and the incident angle would reflect the light away from observers so that the surface would appear to be dark with "puddles" of light under each fixture.

The following suggestions were made by the people contacted for discussion. It should be noted that these suggestions are not necessarily ranked in order of merit.

a. Electro-luminescent. No tubes or bulbs. Electrical coating provides diffused, glareless light. Operate cold, exceptionally rugged, light weight and compact. Unaffected by temperature and humidity extremes. May be shaped or curved to fit.

It was suggested that for a very dramatic effect that electro-luminescent strips could be attached to the arches. This was not investigated further at this time, as the individual most familiar with this product is located in Massachusetts. However, the name and phone number is available for further information if desired.

b. Fluorescent. Fluorescent fixtures similar to those utilized to illuminate our highway signs could be attached to the arches. This type of installation would present a very uniform type of illumination but would present a maintenance problem and would require the attachment of equipment to the arch which you indicated you did not wish to do.

Copy To Merchant 8-22-68

NOTED
TOM EDWARDS

c. Floodlighting. Two methods were proposed. One would illuminate the under side of the arches and would be aimed across from one side to the other. This would highlight the inside as well as the underside. However, this would present problems when attempting to illuminate the arch below the roadway portion.

The other suggestion involves ground mounting banks of flood lights located laterally a minimum distance of 100 feet from the bridge piers. This, of course, would involve right-of-way or easements, but recommended as being the ideal situation.

These flood lights could utilize mercury-vapor lamps for long life and being mounted near the ground could be easily maintained. The floodlights could be shielded and/or louvered to prevent glare to street, railway or river traffic.

It was discovered during the course of this investigation that the arch in St. Louis has not as yet been illuminated, although a number of manufacturers have made experimental installations. Due to the high reflectance of this stainless steel arch, all lighting attempts have resulted in a series of bright spots. While fluorescents have been suggested, the National Park Service has not approved of attaching fixtures to the arch.

Ground-mounted floodlighting would appear to offer the best solution to the illumination of the Fremont Bridge arches. If approved, the Highway Department could handle the engineering and the design would not affect the work of the consultants.

L. E. George
Assistant Traffic Engineer

LEG:mk

RECEIVED
AUG 22 1968
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
AUG 22 1968
FOR FILING

UNITED STATES GOVERNMENT

Memorandum

I 405-8(17)303
7276

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

477 Cottage St. NE. - Salem OR 97301

DATE: August 20, 1968

In reply refer to: 08-35.7

TO: Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

FROM: R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(4)303
Fremont Bridge Section
File 42242 - Kellogg

Please refer to Staff Attorney Jack L. Sollis' letter of August 13, 1968 requesting our approval of the Use Restrictions on File 42242. We have reviewed the restrictions and approve them as written. You may now proceed with appraisals and negotiations for imposition of the Use Restrictions.

Orig & Rdie 8-21-68 copy to Young

NOTED
E. B. KLAHN

RECEIVED
AUG 21 1968
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
AUG 15 1968
FOR FILING

I-405-8(17)303
7276

August 14, 1968

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon

6182

Re: Fremont Bridge Superstructure
Plans and Specifications
Bridge No. 2529

Your File: 08-35.6

Dear Sir:

We have studied the comments in your letter of July 31, 1968 pertaining to your review of the preliminary plans and specifications for the subject project and have taken the appropriate action.

Attached is a copy of our letter dated August 13 to Parsons, Brinckerhoff, Quade and Douglas, which covers your comments and also instructions based on our own review of the preliminary plans and specifications.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

Attachment

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant
L. H. Young (enc.)

LLH:jf ja

Form FH-121 (4-67)

UNITED STATES GOVERNMENT

Memorandum

Edwards

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage St. NE. - Salem OR 97301

DATE: July 31, 1968

In reply refer to: 08-35.6

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

FROM : R. E. Simpson, Division Engineer
for Salem, Oregon

SUBJECT: Oregon Project I-405-8(16)303
Fremont Bridge Superstructure Plans

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
AM AUG 2 - 1968 PM
7,8,9,10,11,12,1,2,3,4,5,6

We have completed a review of the plans and find them generally satisfactory subject to consideration of these items previously discussed at the May 27 meeting in Mr. Merchant's office and the following comments:

1. With respect to the use of A514 and A588 steels the welding of these steels will have to be covered in the Special Provisions. In this regard we call your attention to our Circular Memorandum dated August 19, 1966 which includes a draft of "Proposed Special Provisions for Quenched and Tempered Steel", and Circular Memorandum dated January 16, 1968 entitled "Modification of Circular Memorandum of October 4, 1966 on the subject 'Use of Modified Steel on Federal-aid Projects.' "

2. Plan Sheet 26 indicates 1/2-inch welds fastening the 24-inch by 3-inch suspender rope socket plate to the 48-inch by 1-inch web plate. We recommend these welds be changed to double V or to J welds. We also suggest this detail could be modified to use suspender sockets and guide castings at the top as well as at the bottoms in lieu of the socket and pin arrangement now shown at the tops.

3. We note that the plans now show a 1/2-inch thickness of floor plate for the orthotropic deck system. A design change was made for the Poplar Street Bridge in St. Louis in which it was decided to increase the plate thickness to 9/16-inch to provide more adequate support for the wearing surface. We feel that this modification should also be taken under advisement for the subject bridge.

4. As discussed at the May 27 meeting in Mr. Merchant's office, we still feel it would be desirable to let a separate later contract for the orthotropic wearing surface. With the increased use of orthotropic construction in this country we believe there will be significant developments in this field. A delay in contracting the wearing surface will permit the design to take advantage of any such developments and to benefit from the additional experience record on structures now completed or nearing completion.

(more)

Merchant - R S
Copy - Young

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

5. At a recent meeting at Mr. Roake's office concerning the lighting it was agreed that some further study would be made of using a staggered light standard spacing on the upper deck. Also as agreed we withdraw our previous recommendation for use of 35-foot standards in order to permit a uniform height of 30-foot standards throughout the Fremont complex and thus simplify maintenance.

6. We understand there will be extensive revisions in the Special Provisions and request that you furnish us revised preliminary Special Provisions as soon as they become available.

NOTED
L. L. WALLACE

RECEIVED
AUG 1 1968
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
AUG 16 1968

UNITED STATES GOVERNMENT

FORM

Memorandum

I-405-8(12)303

7976

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage St. NE. - Salem OR 97301

DATE: August 13, 1968
In reply refer to: 08-35.7/410.3

TO: Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

FROM: R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(4)303
Fremont Bridge Section
File 35107

Please refer to Chief Counsel G. E. Rohde's letter of June 28, 1968 requesting our approval of the Land Use Restrictions to be imposed on the property of the Commission of Public Docks. We have reviewed the proposed restrictions and this letter constitutes our approval to proceed with appraisals and negotiations in order to acquire the needed right of way for the Fremont Bridge.

orig to Rohde
8-14-68
copy to Young
Morgan
8-15-68

NOTE
F. B. KLAES

RECEIVED
AUG 14 1968
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
AUG 16 1968
FOR FILING

UNITED STATES GOVERNMENT

Memorandum

I-405-8(17)303
7276

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

477 Cottage St. NE. - Salem OR 97301

DATE: August 8, 1968

In reply refer to: 08-35.7

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(4)303
Fremont Bridge Section
File 42134

Chief Counsel G. E. Rohde's letter of July 30, 1968 forwarded revised use restrictions which have been tentatively agreed to by Pacific Power and Light Company and the State Highway Department. We have reviewed the use restrictions and concur that they are adequate to provide protection to the proposed structure which will be built on the adjoining parcel. Before any settlement is undertaken with Pacific Power and Light Company, the State should secure appraisals in accordance with their policies and procedures.

orig to Rohde 8-9-68
copies to Litchfield
Moehring
Morgan
Young
8-13-68

NOTE F. B. K.

RECEIVED
AUG 9 1968
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

files

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COMMISSIONERS
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GLENN L. JACKSON, CHAIRMAN
PORTLAND
DAVID B. SIMPSON, MEMBER
PORTLAND
FRED W. HILL, MEMBER
HELIX

I-405-8(17)303
7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

July 31, 1968

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street N. E.
Salem, Oregon 97301

Attention: Roy H. Tokerud

Subject: Fremont Bridge Superstructure
Stadium Freeway
Multnomah County
Bridge No. 2529
Your File 08-35.6
Project I-405-8(17)303

Dear Sir:

Reference is made to your letter of June 21, 1968, regarding the May 27, 1968, discussion of preliminary plans for the Fremont Bridge.

Item No. 1: We do not agree with your comments regarding discontinuity of plates at panel point 14. We believe the drawings indicate that the vertical arch rib plates are continuous through slots cut through the top and bottom plates of the 18'0"-deep girder.

There is a transition section between the horizontal girder plates and the adjacent splice points, in which both the 46" by 2" top and bottom plates and the 46" by 4" center web plates of the rib section are furnished. However, the 1/2" fillet weld shown in Section BB is not appropriate.

Item No. 2: As the result of this memorandum, on Friday, July 26, 1968, there was a meeting in the office of T. C. Roake regarding this subject. Mr. Herb A. Schell, Jr. and Wallace N. Bryant from the Bureau of Public Roads, and V. P. Johnson, W. Zirbes, Robert Dixon and T. C. Roake from the Highway Department, were present to discuss the illumination on the Fremont Bridge and its approaches.

One point in the original design to which the Bureau had taken exception, was the 90' opposite spacing for the illuminaire

units on the main bridge. Parsons, Brinckerhoff, Quade & Douglas have been instructed to redesign the lighting system on this section of the bridge so that in all respects it is consistent to that of the two approaches. This phase of the work is now being accomplished.

The second point discussed concerned the relative merits of 30' and 35' mounting heights. The Bureau's calculations showed that a slightly better uniformity ratio could be obtained with the use of 35' mounting heights. There was so little difference that this point is largely academical.

At the time that the original design criteria were established for the Fremont Bridge and its approaches, consideration was given to the question of a mounting height in excess of 30'. It was realized that there would be certain advantages to the higher mounting height. However, the entire freeway loop system in Portland has a 30' mounting height for illuminaire units.

For simplicity in maintenance and for uniformity, it was decided that it was best to maintain the 30' mounting height for all illumination on the "Portland Pig" and its immediate approaches.

It might be mentioned that elsewhere in the State, including Interstate 205, we are using a 50' mounting height for illuminaire units.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

NOTED
TOM EDWARDS

ORIGINAL SIGNED
By T. C. ROAKE
Theo. C. Roake
Asst. Bridge Engineer

TCR:jr

cc: Tom Edwards
A. E. Johnson
F. B. Crandall
Howard, Needles, Tammen & Bergendoff
Parsons, Brinckerhoff, Quade & Douglas

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JUL 31 1968
OFFICE OF
STATE HIGHWAY ENGINEER

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Very truly yours,

Ivan D. Merchant
Bridge Engineer

NOTED
[illegible]

ORIGINAL SIGNED
By T. C. ROAKE
Theo. C. Roake
Asst. Bridge Engineer

TCR:jr

cc: Tom Edwards
A. E. Johnson
F. B. Crandall

Howard, Needles, Tammen
& Bergendoff

Parsons, Brinckerhoff,
Quade & Douglas

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JUL 31 1968
OFFICE OF
STATE HIGHWAY ENGINEER

LLW + TCR
2529

Form FH-121 (4-67)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage St. NE. - Salem OR 97301

DATE: June 21, 1968

In reply refer to: 08-35.6

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon Attention: Mr. I. D. Merchant

FROM for R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure

We attach hereto a copy of a memorandum to the File by Mr. R. Tokerud concerning the May 27 discussion of preliminary plans for the Fremont Bridge.

We have not completed our review but ask that you study the following two items:

1. We are concerned over the discontinuity of plates where the rib passes through the girder (shown on Sheet 25). With the arrangement of plates shown it seems that there will be abrupt stress changes and uncertain stress flow patterns.

2. Our present study indicates that adequate lighting can be obtained on the upper deck by using 35-foot poles with staggered spacing thus reducing the number of poles by one-half. For such an arrangement we recommend the use of Type III 21,500 lumen lamps to give substantially the same level and uniformity of illumination as that proposed by the consultant. (The consultant's proposal for the lower deck appears satisfactory.)

Enclosure
Memo, Tokerud to Files, 6-10-68

T. C. ROAKE

Copy to Edwards 6-24-68

NOTED
L. L. WALLACE

RECEIVED
JUN 24 1968
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

Merchant.

477 Cottage St. NE. - Salem OR 97301
June 10, 1968
08-35.3

Files

Original signed by/
E. W. PILLSBURY

R. H. Tokerud, Bridge Engineer
Salem, Oregon

Oregon Project I-405-8(17)303
Fremont Bridge Superstructure

A meeting was held in the State Highway Building on May 27 to discuss details of and progress on the design of the superstructure of the Fremont Bridge. The following were in attendance:

L. G. Silano, Project Engineer, Parsons, Brinkerhoff, Quade & Douglas, Inc.
Tom Edwards, Assistant State Highway Engineer, OSHD
Ivan Merchant, Bridge Engineer, OSHD
Ted Roake, Assistant Bridge Engineer, OSHD
Len Wallace, Chief Design Engineer, OSHD
Roy Tokerud, Bridge Engineer, BPR
Herb Schell, Area Engineer, BPR

The preliminary design plans were available but had not been previously reviewed. Therefore, the session consisted mainly of a report by Mr. Silano and questions from the other participants. Some of the items discussed and/or recommendations made were as follows:

1. Mr. Edwards raised a question about the arch rib being a series of chords rather than a curve. Mr. Silano suggested that it would make no difference in the appearance and, in fact, not be apparent; however, he will check further into this.

2. Mr. Silano reported that they had received a preliminary report on the wind tunnel tests being performed and that these were favorable and indicated that the 75 pounds per square foot used so far in the design was satisfactory.

3. The wearing surface on the orthotropic deck was discussed. The consultant is not ready to make a specific recommendation on this; however, they currently favor the system used on the San Mateo Bridge in California. The consultants reported that they would

BRIDGE ... AM ... P.G.E.

(more)

recommend the wearing surface be let to contract at a later date for two reasons: first, to gain additional information from experience of wearing surfaces on other bridges and, second, to place the work in the hands of a paving contractor.

4. The arch rib members will consist of 4-foot square box sections with high strength A-514 steel. The splices in the rib will have milled ends and, in addition, will be designed with vertical splice plates based on 50 percent of the sections joined and horizontal splice plates based on 100 percent of the sections joined.

5. Box-shaped members will also be used extensively for bracing and columns. The consultant proposes to use sealed sections for these members in order to avoid the necessity of inside painting. He also proposed to use A-588 steel in these members.

6. For that portion of the lower deck which is suspended from the upper deck, the stringers frame into the floor beam and are simple spans. The preliminary plans called for a deck joint at each floor beam throughout this portion. I expressed the opinion that this was undesirable from the standpoint of obtaining a smooth riding deck, since over the years most of rough spots occur at deck joints. Also, the State's practice now is to use guard angles at all deck joints and this further complicates the obtaining of a smooth deck surface. Mr. Silano reported that it was their general practice to always place joints at each panel point for this type of system; however, he said he would give this further study and possibly joints would be placed at the second or third panel points only.

7. The State informed Mr. Silano that no foreign steel would be used on this project. This is in line with a recently adopted policy for all projects in Oregon.

8. The lighting proposed includes 30-foot light standards in pairs at 90-foot centers. On the lower deck, these would be suspended from the upper floor beams. The lighting is to be further studied and coordinated with that proposed for the approach interchanges. The consultant said that if revisions are to be made, the light locations should preferably be maintained at the panel points.

9. The consultant has designed a sign bridge consisting of straight columns and a four-pipe"box-shaped" horizontal member with solid vertical web plates. This compares with a triangular trussed rigid frame type that has been designed for the approach interchanges. It was agreed that the matter should be further studied in order to coordinate sign bridges on the main bridge and approaches.

10. The GM shaped steel railing for the upper orthotropic deck as shown on the plans was open over most of the bottom and back side. To improve appearance and to eliminate pigeon roosts the rail section will be entirely enclosed.

(more)

11. Some revisions will be made on the drain pipes in order to eliminate downspouts from the upper deck to the lower deck except at piers. Minimum size of drain pipe will be increased from 6 inches to 8 inches.

12. The plans show a pipe railing running over the top of the arched rib for the safety of the maintenance men who would service the air navigation beacon. This railing will be deleted and maintenance men can choose between going up inside of the arch rib or walking on top without benefit of a rail.

13. The consultant proposed that representatives of some of the steel companies be called in for a discussion of the preliminary plans and that some of the plans or details be made available to these people for their review and comments. Since this design involves unusual details and very large sections, it was felt that industry people might come up with suggestions for improvements. This matter will be further considered.

14. The question was raised as to the possibility of "outline" lighting for the arch span. Since this may eventually be done, the consultant will consider making some provisions for such a future installation.

15. The consultants estimate that they will have checked plans and specifications ready to deliver to the State by late July 1968. This will fit in well with the State's present schedule for contracting which calls for the West Fremont Interchange to go the last quarter of 1968. Or, if the West Fremont project is not ready to go by the last quarter of 1968, then this schedule may be reversed. & the main spans to go the 1st Qtr in '69.

16. Mr. Silano estimated about 2 years construction time for this project. The State will naturally make an effort to coordinate the completion dates of contracts for the main bridge and the approaches. It appears that the final unit to be completed will be the East Fremont Interchange. The present thinking is that the contract for the East Fremont Interchange should specify that two connecting ramps from the main bridge to the north should be completed early in order to get traffic over the bridge as soon as the main spans are complete.

cc:
Region (08-00.35)
Tokerud (2)

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BRIDGE DEPT.
DIVISION
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PM
DISTRICT 4

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JUL 31 1968
FOR FILE

I-405-8(17)313
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
July 29, 1968

To: Ivan Merchant
Bridge Engineer
B U I L D I N G

Attention: T. C. Roake

SUBJECT: Illumination
Fremont Bridge and Approaches
Stadium Freeway
Portland

On Friday, July 26 there was a meeting in your office attended by representatives of the Bureau and of this office. The purpose of the meeting was to discuss the illumination on the Fremont Bridge and its approaches.

One point in the original design to which the Bureau had taken exception was the 90-foot opposite spacing for the luminaire units on the main bridge. It is understood that the consultant has been requested to redesign this to provide a staggered spacing of approximately 180 feet between units on one side of the bridge.

The second point discussed concerned the relative merits of 30 and 35-foot mounting heights. The Bureau's calculations showed that a slightly better uniformity ratio could be obtained with the use of 35-foot mounting height. There was so little difference that this point is largely academic.

At the time that the original illumination design criteria were established for the Fremont Bridge and its approaches, consideration was given to the question of a mounting height in excess of 30 feet. It was realized that there would be certain advantages to the higher mounting height; however, the entire freeway loop system in Portland has a 30-foot mounting height for luminaire units. For simplicity in maintenance and for uniformity, it was decided that it was best to maintain the 30-foot mounting height for all illumination on the "Portland Pig" and its immediate approaches.

It might be mentioned that elsewhere in the State, including Interstate 205, we are using a 50-foot mounting height for luminaire units.

L. E. George
Assistant Traffic Engineer

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JUL 29 1968
OFFICE OF
STATE HIGHWAY ENGINEER

VPJ:ji

cc: Tom Edwards

NOTED
TOM EDWARDS

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I-405-8(17)303
7376

Salem, Oregon
July 12, 1968

RAILROAD COMPANIES
FILE No. 603

Union Pacific Railroad Company
Agreement

H h

7-9-68

Mr. G. E. Rohde
Chief Counsel

Attention: Mr. Jack Sollis

B U I L D I N G

Attached are two copies of an extension rider with Union Pacific Railroad Company extending the expiration date of the existing license to make surveys on Railroad property for the proposed Fremont Bridge.

We are retaining a conformed copy until we receive a fully signed copy of this rider.

Floyd Query, Secretary

fkn
Attachments

cc Mr. F. D. Morgan
Attn: Ted Litchfield

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JUN 20 1968
FOR FILING

Cover
Corr
Mun - Portland
Fremont Br

June 19, 1968

Oregon State Highway Commission

Gentlemen:

There will be on the agenda for the July 9 meeting an extension rider to the November 26, 1962 agreement with the Union Pacific Railroad Company which will extend the expiration date of the existing licenses to make surveys on Railroad property for the proposed Fremont Bridge from November 25, 1968 to November 25, 1970. This is on I-405 (Stadium Freeway) in Portland.

We recommend your approval.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

cc: Floyd Query
F. B. Klaboe
Victor D. Wolfe
F. D. Morgan
A. E. Johnson

TWL:ss jko

RECEIVED
AUG 28 1967
FOR FILING
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Muni - Portland
Fremont Br

August 25, 1967

Oregon State Highway Commission

Gentlemen:

There will be on the agenda for the August 29 meeting an extension rider of the November 26, 1962 agreement with the Union Pacific Railroad Company which will extend the expiration date from November 25, 1967 to November 25, 1968, of the existing license to make surveys on Railroad property for the proposed Fremont Bridge. This is on I-405 (Stadium Freeway) in Portland.

We recommend your approval.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc Floyd Query
R. L. Porter
F. B. Klaboe
Victor D. Wolfe
L. H. Young
C. H. Maison
A. E. Johnson
P. S. Morgan

TWL:fw fn

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FOR FILING

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Carg
Nikuni Stotler
Leonard Re.

July 8, 1966

Oregon State Highway Commission

Gentlemen:

There will be on the agenda for the July 14 meeting an extension rider from the Union Pacific Railroad Company which will extend the expiration date from November 25, 1966 to November 25, 1967 of existing license to make surveys on railroad property for the proposed Fremont Bridge.

We recommend your approval.

Very truly yours,

Forrest Cooper
State Highway Engineer

bc Floyd Query
R. L. Porter
F. B. Klaboe
Victor D. Wolfe
L. H. Young
C. H. Maison
A. E. Johnson
F. D. Morgan
T. W. Litchfield

OCT 6 - 1965
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Fremont Br

October 5, 1965

Oregon State Highway Commission

Gentlemen:

We have formal permission from the Union Pacific Railroad Company to conduct surveys across Railroad property in the Albina District for the preparation of plans for the construction of Interstate Route 405 in Portland. This covers the area from the proposed Fremont Bridge easterly to a connection with Interstate 5.

The present permit expires on November 25, 1965, and it is proposed to extend it another calendar year to November 1966. The Railroad has asked that the Commission execute a formal extension agreement, which I recommend have your favorable consideration.

This item will be on the agenda for the November 4 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

cc Floyd Cuery
F. B. Klaboe
Victor D. Wolfe
F. D. Morgan
T. W. Litchfield
D. H. Moehring
A. E. Johnson

FEK:srb RLP:ms fn

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JUL 6 1964
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Const
Engr
Muni-Portland
Fremont Br.

July 3, 1964

Oregon State Highway Commission

Gentlemen:

In order to carry on survey work, bridge foundation investigations, and other activities in connection with the design of the Fremont Bridge, it is necessary to work on part of the Union Pacific Railroad Company's property at the Albina Yards in Portland.

Our present agreement with the Union Pacific expires on November 25, 1964, and it is now desired to extend this date until November 25, 1965. The Railroad Company demands an extension of the agreement on the matter and one will be presented to you at the July 14 Commission meeting. I recommend that it have your favorable consideration.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc Floyd Query
R. L. Porter
Victor D. Wolfe
L. I. Lindas
C. H. Maison

FLP:ms bbc

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DEC 13 1962
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Coast
Coos
Bridge Ist Road
Interstate

December 13, 1962

Oregon State Highway Commission

Gentlemen:

There will be before you for your consideration at the December 20 meeting an agreement with the Union Pacific Railroad Company giving us entry into its property in Albina to make surveys for the north approach to the Fremont Bridge.

This agreement is in acceptable form and your approval and execution of the agreement is recommended.

Very truly yours,

G. S. Paxson
Acting State Highway Commission

GSP:fm

cc Floyd Quarry
G. S. Paxson
F. E. Morgan
S. H. Cox

I-405-8(17) Fremont Bridge Sec., Stadium 1969
303 Freeway, in Portland.
#7276 (Superstructure) Folder #1

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I-405-8(17)303
727L

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Rm. 412 Mohawk Building
222 S. W. Morrison Street
Portland, Oregon 97204

June 17, 1968

IN REPLY REFER TO

08-00.11

Mr. Forrest Cooper
State Highway Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

copies 6-19-68
REFERRED TO
Robbie-Morgan
BY ASST. STATE HWY. ENGR.
Merchant-
will acknowl.

ATTENTION: F. B. Klaboe, Assistant
State Highway Engineer

RE: Oregon Project I-405-8(303, Fremont Bridge Section,
Stadium Freeway, Union Pacific Railroad

Gentlemen:

This is in response to your letter of February 20, 1968. In that letter you requested further review of the interpretation "railroad operating facilities" as set forth in paragraph 5d of PPM 30-3 and as it applies to the National Carloading Building on the above referenced project. This requested review was in the nature of a resubmission as the Bureau's Office of Right-of-Way and Location had previously ruled on this matter.

Your request was submitted to the Office of Chief Counsel, with his opinion being issued on May 20, 1968 (copy enclosed). This opinion rules that since there is no legal definition under State law of non-operating facilities or property, the Bureau's past definitions of terms should be applied. Therefore, Federal-aid funds do not qualify for participation in the costs for relocation of the building in question.

On June 10 this opinion as well as other legal problems related to this project were discussed with your Chief Counsel. In addition, this office will continue to to offer all possible assistance in an effort to insure that the acquisition is acquired on schedule.

NOTED
F. B. KLABOE

RECEIVED
JUN 18 1968
OFFICE OF
STATE HIGHWAY ENGINEER

Very truly yours,

ROBERT B. RUTLEDGE
Regional Counsel

NOTED
TOM EDWARDS

Encl.
cc: R. E. Simpson (w/encl.)
H. A. Heffron

MAY 20 1966

Mr. Robert B. Rutledge
Regional Counsel
Portland, Oregon

26-40

Howard A. Hoffman, Chief Counsel
by:
Fletcher Krause, Assistant Chief Counsel

Oregon - Project I-405-8(4)303 - Fremont Bridge Section,
Stadium Freeway, Union Pacific Railroad

Pursuant to your request of April 29, 1966, we have reviewed the question of Federal participation in the costs of relocation of the subject National Carloading Building.

We would not object to Federal participation in relocation costs of railroad facilities which are shown on credible evidence and legal authority to be "operating facilities" under State law or as the term has been interpreted and defined in the administration of the highway program by the Bureau of Public Roads in the application of its policies and procedures. However, in the present case the information recently submitted, and that previously in our files, indicates the following sequence and course of events:

The State's April 22, 1966, memorandum to the files states that at an April 14, 1966, conference with the Union Pacific Railroad the railroad officials "* * * indicated that the property was now industrial and occupied by a lessee * * *," and "We pointed out that it may be possible to relocate the buildings under PPM 30-3 as operating railroad facilities." (Emphasis supplied.)

May 3, 1966, the Union Pacific Railroad Company wrote to the State highway engineer referring to "* * * our operations and the business of our tenants, National Carloading, in the buildings located beneath the structure, * * *" and "* * * our operations or for our tenants' business * * *."

"As you are aware, this building is occupied by a forwarding company engaged in a business essential to railroad operations and it is expected that similar usage of the building will be desired in the future. If it were to be left in its present location, even without consideration, the limitations placed upon access by the location of piers, the mere existence of the overhead structure with the attendant nuisances and potential hazards would impose limitations upon the desirability and usefulness of the building inconsistent with its present use." (Emphasis supplied.)

"Similarly, limitations which would be imposed by the existence of the structure would be inconsistent with continuation beneath it of the operations now being carried on by this company in the affected buildings."

May 13, 1967, James W. Diffenderfer, transmitted to the State his report on the effect of the Fremont Bridge on railroad operations in which he concluded that, "While not an operating facility, the warehouse serves as an essential source of business for the railroad, being a location where it receives and delivers freight in carload lots from and to National Carloading and its subsidiary, Pacific and Atlantic shippers." (Emphasis supplied.)

October 31, 1967, the National Carloading Corporation, pursuant to request of the General Solicitor of the Union Pacific Railroad Company, wrote the General Solicitor a letter furnishing information as to the National Carloading Corporation's use of the freight house, in which it stated that National Carloading Corporation was a freight forwarder which ships, receives, loads, and unloads freight transported by railroad. That it had leased the freight house on August 23, 1947, for a ten-year period which with extensions lasted until July 31, 1967, at which time the Company vacated the premises.

October 5, 1967, National Carloading again leased from the railroad 1,800 square feet of the freight house. The balance was utilized by the Western Transportation Company, another forwarder, and the Union Pacific Railroad Company. The National Carloading Corporation's letter cited information intended to rebut a statement made by Mr. Diffenderfer to the effect that the National Carloading policy had been to avoid routing transcontinental shipments by the Union Pacific and they used mostly the Great Northern and Northern Pacific for such shipments, and that the building was "non-operating property."

November 7, 1967, Union Pacific General Attorney Bergmann, wrote for the Union Pacific's General Solicitor Kester to the State highway department a brief for the purpose of establishing, based upon the Ada County v. Oregon Short Line R. Co. cases (Idaho cases) decided in the Idaho and Federal courts, that the freight house constituted "operating property."

November 16, 1967, Mr. Diffenderfer wrote Assistant State Highway Engineer Klaboe stressing the point that the warehouse serves as an essential source of business for the railroad "being a location where it receives and delivers freight in carload lots and referring to OSS 374.020, and basing "clarification" of his former conclusion on the facts set out in the Bergmann letter, and the fact that the Union Pacific had assumed occupancy of the buildings after his first conclusion. He reversed his posture and concluded that the National Carloading Building was "operating property."

"ORS 374.020 prohibits the establishment of a throughway upon or across the tracks * * * or other operating properties of any common carrier railroad, or upon, across any industrial or business property served by railroad industrial trackage, or upon or across any property at such a location as to unduly interfere with the reasonable access of shippers, passengers, or the public to railway depots, team tracks, or other facilities for receiving or delivering freight or passengers transported by railroad unless the State highway commission and the railroad agree on a proposed throughway project or unless the Public Utility Commission finds by order, upon petition of the State highway commission, * * * that public convenience and necessity so require." (Emphasis supplied.)

Railroad Attorney Bergmann's letter cites ORS 308.510(4)(c) as follows: "A rail transportation company shall be deemed the user of property situated within its station ground reservations or rights of way notwithstanding the fact that such property may be leased, rented or otherwise assigned by it for the use or benefit of another" and interprets this as authority for the conclusion that such property is thereby designated as operating property by the Oregon statutes.

The fact is that the Oregon provisions of which the above language forms a part are provisions for the assessment by the State Tax Commission of the property of designated utilities and companies. It defines "person," and "company," "corporation," or "association" collectively to include "* * * any person, group of persons, whether organized or unorganized, firm, joint stock company, association, cooperative or mutual organization, people's utility district, cooperative telephone district, syndicate, co-partnership or corporation engaged in performing or maintaining any business or service or in selling any commodity as enumerated in ORS 308.515, whether or not such activity is pursuant to any franchise." (Emphasis supplied.)

Section 308.515, entitled "State Tax Commission to Make Annual Assessment of Designated Utilities and Companies" provides that:

> "(1) The State Tax Commission shall make an annual assessment, upon an assessment role to be prepared by the Commission, of the following property having a situs in the State;
>
> > (a) except as provided in subsection (2)[subsection (2) deals with certain water transportation items, not pertinent here] of this section, any property held for or used by any company in performing or maintaining any of the following business or services or in selling any of the following commodities, whether in domestic or interstate commerce or both, and whether mutually (sic.), or for hire, sale, or consumption by other persons;

railroad transportation; railroad switching and terminal; electric rail and trackless trolly transportation; sleeping car; refrigerated car; private car; tank car; air transportation certified by the Civil Aeronautics Board for scheduled air service; water transportation upon inland waters of the State of Oregon; air or railway express; telegraph communications; telephone communications; heating; water; gas; electricity; pipelines; toll bridge." (Material in brackets supplied.)

* * *

"(4) Any corporation included within subsection (1) of this section, to the extent that it actively engages in any business or service not described therein or not incidental to any business or service or sale of a commodity described therein, shall not to that extent be deemed a corporation whose properties are assessed under ORS 308.505 to 308.730."

Section 308.517

* * *

"(2) Where any property owned, leased, rented, chartered or otherwise assigned by an owner, lessor, lessee or user whose property is otherwise subject to ORS 308.505 to 308.730, is leased, rented, chartered, or otherwise assigned for the use or benefit of a company which has or thereby has property subject to ORS 308.505 to 308.730, the Commission may assess the property to either the owner, lessor, lessee, or user."

In view of the last above provision, the fact that the buildings in question are centrally assessed by the Oregon State Tax Commission along with other property of the railroad which is unquestionably "operating property" is not significant. It is not at all clear to us from these statutes that their application is confined to "common carriers" or that the use referred to is use only in the business of a common carrier. The statute is an assessment statute for the purpose of taxation, and its classification is primarily for that purpose, and in view of the form of the statute and the failure therein to even refer to the term "operating properties" or "operating facilities" or to clearly separate common carriers or railroads from other businesses in the treatment given, we think the statutes are not authority as to what does or what does not constitute "operating properties" or "operating facilities" of a railroad.

It is quite evident from a study of the cited Oregon statutes and the apparent absence of decision law on the subject in Oregon that there is no definition in the law of that State of "railroad operating facilities" or "operating properties" which could be utilized as criteria for the application of the term "operating facilities" as used in FPM 30-3 at paragraph 5d.

The record appears to support the view that at the beginning of negotiations between the State and the railroad there was little doubt that the building in question was in fact non-operating property as far as the railroad was concerned, and that if the character of the property has in some respects changed by its partial occupancy by the railroad for some sort of railroad purposes, such change came about after the State had voluntarily suggested the possibility of fitting the property into the "operating property" category.

Our file indicates that this property is classified on the Interstate Commerce Commission records as non-operating property (Class IV, non-carrier property).

There being no legal definition of "non-operating facilities" or "non-operating property" in Oregon law, under the situation existing in this instance we think there is no alternative to the application of the Bureau's past interpretation of the meaning of the term "railroads operating facilities" as used in paragraph 5d of PPM 30-3 which is; "a 'railroad's operating facilities" means those properties or facilities, other than land, of a railroad which are reasonably necessary to and used in the performance of its required functions as a common carrier as opposed to properties or facilities which the railroad holds or utilizes in its private business, not in its capacity as a common carrier."

Under the circumstances of this case we are of the opinion that the building in question does not qualify for Federal-aid participation in the costs of relocation under the provisions of PPM 30-3 as "railroad operating facilities" as referred to in the paragraph 5d thereof.

We do not understand the logic of the fourth paragraph of the February 20, 1968, letter from the State highway department to you. The third paragraph of that letter requests that the question of whether the building in question is operating property be submitted to this office because the State feels it is a matter for legal determination. Then in the fourth paragraph it is stated that if Mr. Diffenderfer testifies for the State, the railroad will undoubtedly call him as a witness on the status of the National Carloading Building, and that "he will testify that it is operating property." It would appear that such testimony would be a legal conclusion and on that basis be inadmissible.

As to the suggested possible approach to a settlement contained in the last paragraph of your April 29, 1968, memorandum, we do not think it would be advisable, as a matter of precedent, to concede for the purpose

of expediting a settlement that the building constitutes "operating property" irrespective of the fact that it does not clearly fall in the category of "operating property" as defined by State law or as the term has been interpreted by the Bureau in the application of paragraph 34 of RMO 30-3.

MAY 22 1968
I-405-8(4)303
1976

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Rm. 412 Mohawk Building
222 S. W. Morrison Street
Portland, Oregon 97204

RECEIVED
MAY 20 1968
OFFICE OF STATE HIGHWAY ENGINEER

May 17, 1968
IN REPLY REFER TO
08-00.11

Mr. Jack Sollis
Utilities & Railroad Attorney
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

NOTED
F.B. KLABOE

Re: Oregon I-405-8(4)303, Fremont Bridge Section, Stadium Freeway, Union Pacific Railroad

Dear Jack:

I have enclosed a copy of a decision by the Washington office on a railroad relocation problem which appears to be somewhat similar to the one here in Portland. While there has been no reply to the questions raised previously by your office, this opinion may give you an indication of how the Chief Counsel's office may rule on the operating vs. non-operating portion of this problem.

Very truly yours,

ROBERT B. RUTLEDGE
Regional Counsel

Encl.

RBR:sjw

REFERRED TO
Porter
BY ASST. STATE HWY. ENGR
Have you seen this?
7

NOTED
R.L. PORTER

RECEIVED
MAY 20 1968
OFFICE OF
STATE HIGHWAY ENGINEER

Mr. J. A. Swanson, Director
Office of Right-of-Way and Location
Bureau of Public Roads

MAR 2 6 1968

56-01

Howard A. Hoffron, Chief Counsel
By: Fletcher Krause
Fletcher Krause, Assistant Chief Counsel

Maryland - I-83-1(32) - Railroad Relocation
(Re: Memorandum of December 22, 1967,
from Regional Federal Highway Administrator Schofer)

Pursuant to our informal discussions and your memorandum of February 7, 1968, on the captioned subject, we have reviewed Regional Federal Highway Administrator Schofer's December 22, 1967, submission, including the November 17, 1967, opinion by the State Roads Commission Special Attorney.

The submission indicates that, not only has the railroad itself classified the sheds in question as non-operating property, but that the property has been so designated by the ICC and the State Department of Assessments and Taxation and has been customarily taxed by the Department of Assessments and Taxation of Baltimore City as ordinary privately owned property. However, the State takes the position that classifications for tax and ICC regulatory purposes are not believed to be determinative of the subject of Federal participation under title 23, section 123, U.S.C., and para. 5d of PPM 30-3, October 15, 1966, "Reimbursement for Railroad Work."

We agree that as indicated in the State's opinion, the truly significant area of inquiry is as to the meaning of the highway act, and the regulations written in furtherance thereof, and would also add to that, "the meaning of the policies and procedures promulgated pursuant to the authority thereof."

We also agree that the differentiation between types of railroad property as to whether it constitutes "operating property" or "non-operating property" should be based on the determination as to whether the particular facilities are reasonably necessary to the operation of the railroad as a common carrier, or whether it is owned and used for the purpose of carrying on a business or activity separate and distinct from the railroad's operation as a common carrier.

First of all, section 123 of title 23, U.S.C., which provides for Federal reimbursement to a State when it pays for the cost of relocation of utility facilities, may be applied to railroad facilities, but only to those facilities which constitute facilities of the railroad as a public utility (a common carrier). We are aware of no authority to the effect that the purely business activities of a railroad, not part of the railroad's obligation as a common carrier, can qualify property used therefore for Federal-aid participation under section 123 in relocation expenditures.

On the other hand, railroad properties, not constituting operating properties of the railroad as a common carrier, but used in separate business operations, when taken or readjusted to accommodate a Federal-aid Interstate highway, may be compensated for at fair market value or adjusted on a cost-to-cure basis, so long as the cost to cure does not exceed the fair market value.

Under these conditions, the crucial question herein involves a definition of the meaning of "operating properties" as used in PPM 30-3 at para. 5d. PPM 30-3, as well as the PPM 80 Series (formerly PPM 21-4.1, etc.), was promulgated under section 315 of title 23, U.S.C., which authorizes the Secretary to prescribe and promulgate all needful rules and regulations for carrying out the provisions of the title and pursuant to section 1.37 of title 23, C.F.R., under which the Administrator has been delegated authority to perform the functions vested in the Secretary under Federal law, except the apportionment of Federal-aid funds among the States and the function of issuing and revising regulations, and section 1.32 of title 23, C.F.R., which delegates to the Administrator the authority to promulgate and require the observance of such policies and procedures, and take such other action as he may deem necessary for carrying out the provisions and purposes of the Federal-aid highway laws and regulations.

The above policy and procedure issuances, like the Maryland statutes, refer to "operating property" but nowhere define it. Therefore, it is to the history of the application of this provision by the Government agency responsible for its promulgation and its past application that we have to look to for the intent and meaning of the term. This is not only because of the discretion vested in the Administrator by the above statutory delegation and the authorizations pursuant thereto, but also due to the logic of the situation.

The logic is that there is no sufficient uniformity in the classification of railroad property as operating or non-operating under the various jurisdictions, statutes, and judicial pronouncements, as well as

administrative treatments by official agencies such as the ICC and the various State regulatory and taxing authorities which could furnish a uniform criteria to be applied generally under the Federal-aid program.

The Bureau's position has been that the term "railroad's operating facilities," as used in paragraph 5d of PPM 30-3, means those properties or facilities, other than land, of a railroad which are reasonably necessary to and used in the performance of its required functions as a common carrier as opposed to properties or facilities which the railroad holds or utilizes in its private business, not in its capacity as a common carrier.

In the instant case we are not convinced that the sheds in question have recently been, or are now held or utilized by the railroad in its capacity as a common carrier. On the contrary, the State's representation appears to support the conclusion that these sheds are serving primarily the needs of the tenant who appears from all the evidence furnished to qualify as a forwarder or shipper and that the railroad's obligations as a common carrier are not involved until the carload lots are delivered to it on the truck by the forwarder for transportation.

We agree with your observation at the end of the first paragraph of your February 7 memorandum that "As non-operating facilities or property /as opposed to the term "operating facilities" used in PPM 30-3, paragraph 5d/ the provisions of series 80 Policy and Procedure Memorandums would apply. . ." rather than PPM 30-3.

The State's opinion states that "The agreement between the City and the Pennsylvania Railroad, which contemplates the move of the sheds and trackage serving them at the City's expense, was the only possible way that the land thereunder necessary for I-83 could be acquired."

We cannot accept an unsupported statement of lack of authority to condemn, if necessary, the railroad property needed for the project. If the city cannot condemn, which proposition has not been documented, the question arises as to what was to prevent the State highway department from condemning the property? If the State could not condemn, which proposition we do not accept without thoroughly convincing documentation, has Federal condemnation under section 107 of title 23, U.S.C., been considered?

We are not suggesting Federal condemnation, but only point out the possibility. This approach is only available upon the request of a State when it determines that it cannot acquire or cannot acquire with sufficient promptness, and so decides to request Federal assistance in this manner. In instances where a State does seek such assistance, it is granted only pursuant to the Secretary's determination that the State under its own law and the facts is not able to acquire or acquire with sufficient promptness. Any decision to request Federal condemnation is a decision which the State must make if it is satisfied that it cannot proceed adequately under State law and procedures, and that it can satisfy the Secretary on this point.

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S - Railroad
SM
Mr. Waddel (2) CHWaddel:jl 3/25/68
cc:
Mr. Lasko
Lands
Chron. 510A Don.

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P3

yellow is c. Proj - Consultants

April 19, 1968

Mr. John W. Broome
Broome, Selig & Cringdulph
Post Office Box 15130
Portland, Oregon 97230

Dear Mr. Broome:

Thank you for your April 16 letter addressed to Mr. Glenn L. Jackson, Chairman of the State Highway Commission, which concerns the proposed Columbia River Bridge on Interstate 205. Mr. Jackson referred your letter to this office for reply.

The next Commission meeting is on April 23 and the agenda is full; however, if you would care to discuss this matter with them at the following meeting, it probably will be in late May or early June. Please let us know and we will see that time is reserved for you.

On the Fremont Bridge case, the Commission closely followed the suggestion in your letter; that is, a consultant of international reputation, together with a well-known architect, was retained to prepare preliminary designs and estimates of several possibilities. After these were presented to the City of Portland and were studied by the Planning Commission, the Art Commission, and others, the Highway Commission was requested to construct a bridge that would be patterned after the Port Mann structure in British Columbia. The State's consultant was commissioned to prepare detailed designs and specifications. This work is now under way.

As to the Columbia River crossing, it appears that the Highway Department does not have sufficient staff to design this structure. It is contemplated that a reputable consultant will be selected to do this work, and you may be sure that the Highway Commission will do everything possible to provide a bridge that will be a credit to the states of Oregon and Washington and to the Interstate system.

While it does appear that some type of deck girder structure may be indicated, no decision as to type has been made and probably will not be until the consultant thoroughly studies the crossing problem.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms

cc Forrest Cooper
Tom Edwards
F. B. Kiaboe
Victor D. Wolfe

BROOME, SELIG & ORINGDULPH ARCHITECTS, A.I.A.
R. B. RESSEGER PROFESSIONAL ENGINEER
227 NORTHEAST 122 AVENUE • P. O. BOX 16130 • PORTLAND, OREGON 97230 • 252-0275

15 April 1968

Mr. Glenn Jackson, Chairman
State Highway Commission
Salem, Oregon

Dear Mr. Jackson:

At a recent presentation in Portland regarding the new Fremont Bridge, the subject of the I-205 Columbia River Bridge was discussed. Many of those attending that meeting of the Oregon Building Congress expressed concern over the design of the proposed bridge. The concern still exists.

This bridge will be a major visual force on the Columbia and therefore should command the talents of the most highly qualified designers available. Recently, teams of design consultants from related professions have been of assistance to highway engineers. I have particularly in mind the work of the multi-disciplinary design concept teams working in Baltimore and Brooklyn. These teams include engineers, architects, economists, sociologists, planners, landscape architects and acoustical experts.

I recognize that the design problems here are not of the complexity of the Fremont Bridge and that a simple deck span is being proposed. This does not automatically mean that the design will be a thing of beauty, and therefore, I am requesting your consideration of the employment of a design team of recognized experts. If funds are insufficient for this (and I can hardly imagine that they are) then I would suggest at the very least the employment of a design review team of expert engineers and architects to assist the local state design engineers. I am not questioning the structural design capabilities of the state engineers, but the problems arising over the design of the Fremont and Marquam Bridges could be avoided by the early selection of consultants who are recognized for their imagination and creativity in bridge and building design.

As a member of Governor McCall's Committee for a Livable Oregon, I am particularly interested in the quality of design of the state's buildings, highways and bridges, and in the preservation of, and respect for, Oregon's landscape. In the case of the I-205 Columbia River Bridge, I am concerned about the appearance of the bridge and its relationship to Government Island's ecology should The Port of Portland's proposed land fill project be abandoned. I am wondering if I might be given the opportunity to discuss this subject at the next meeting of the Highway Commission.

Respectfully yours,

John W. Broome

John W. Broome

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APR 16 1968
OFFICE OF
STATE HIGHWAY ENGINEER

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OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
April 11, 1968

To: MEMO TO FILE

SUBJECT: Fremont Bridge
Contract

Before long, the Fremont Bridge on Interstate 405 in Portland will be ready to contract. This will be one of the largest structures in the state and will require substantial quantities of structural steel.

In the past, much controversy, debate, and discussion has occurred over the question of foreign versus domestic material. The State at its discretion may specify either. Also, the specification permitting the painting of steel at the point of fabrication has brought protests from labor organizations and painters' unions.

The matter was recently discussed with Chairman Jackson and it was decided in this case to specify domestic material and fabrication and to permit painting, except for the final coat, to be done at the place of fabrication, the final coat to be applied on the job site after erection.

Forrest Cooper
State Highway Engineer

cc: Highway Commission

I-HCS-8(17)303
7276

OREGON BUILDING CONGRESS

MARCH 28, 1968

THE FREMONT BRIDGE

BY

TOM EDWARDS
ASSISTANT STATE HIGHWAY ENGINEER
OREGON STATE HIGHWAY DEPARTMENT

IN DISCUSSING THE FREMONT BRIDGE, IT IS RIGHT AND PROPER TO EXAMINE THE BACKGROUND AND THE CAUSE AND NEED FOR ITS BEING CONSTRUCTED. ITS CAUSE AND NEED ARE, OF COURSE, TIED TO THE AMERICAN PUBLIC'S ACCEPTANCE OF AND MARRIAGE TO THE AUTOMOBILE.

FACETIOUSLY, I MIGHT ILLUSTRATE THE CLOSENESS OF THE PRESENT-DAY AMERICAN AND HIS AUTOMOBILE BY A TRUE HAPPENSTANCE NOT TOO MANY YEARS AGO. MY WIFE AND I MET ONE OF OUR VERY CLOSE FRIENDS ON THE STREET. THIS FRIEND REMARKED THAT MY WIFE HAD NOT BEEN OVER TO SEE HER RECENTLY. MY WIFE EXPLAINED THIS BY PLACING THE BLAME ON ME, SAYING THAT I HAD TO TAKE THE CAR TO WORK. THE EXCUSE WAS PLAUSIBLE, EXCEPT FOR ONE THING -- THIS LADY LIVED ACROSS THE STREET AND THREE HOUSES DOWN.

THERE ARE OTHER REASONS MUCH MORE COMPELLING THAN PERSONAL DESIRE WHICH HAVE LED TO THE AUTOMOBILE EXPLOSION. AMERICAN INGENUITY IN THE DEVELOPMENT OF TRANSPORTATION HAS BEEN APPLIED TO THE PRODUCTION OF MATERIALS AND GOODS. THE INCREASE IN THE GROSS NATIONAL PRODUCT IS DIRECTLY ATTRIBUTABLE TO THIS FACT. AMERICANS DO NOT HAVE CARS

BECAUSE THEY ARE RICH. INSTEAD, THEY HAVE THEM BECAUSE THEY ARE A NECESSITY IN OUR CURRENT WAY OF LIFE.

THE DEVELOPMENT OF OUR WAY OF TRANSPORTATION IS NOT WITHOUT ITS PROBLEMS. THE MAINTENANCE OF THE CENTRAL BUSINESS CORE OF ANY CITY, THE INSURED EXISTENCE OF ITS VALUE, UTILITY AND ITS CHARM AND BEAUTY HAVE BEEN SORELY SET UPON BY THE NEED FOR TRAVELING AND PARKING SPACE. THE MOVEMENT OF GOODS AND MATERIALS HAS BECOME TROUBLESOME, PARTICULARLY IN THE SHORT-HAUL AREA.

THERE IS GROWING CONCERN FOR MASS TRANSIT. PLANNERS, RESEARCHERS AND COMMUNITY LEADERS IN THE TRANSPORTATION FIELD ARE LOOKING TO HIGH-SPEED MASS MOVEMENT OF PEOPLE AS A SOLUTION. IN ALL PROBABILITY SUCH IMPROVEMENTS WILL OCCUR IN THE FUTURE. CURRENTLY, HOWEVER, MASS TRANSIT HAS ITS PROBLEMS. TO ILLUSTRATE, I QUOTE FROM A RECENT ARTICLE IN THE SALEM STATESMAN:

> "THE ULTIMATE DEPRAVITY OF THE WORLD'S AUTOMOBILE ORGY BEGAN RECENTLY WITH THE OPENING OF A FREEWAY THROUGH PARIS ALONG THE SEINE RIVER. A DRIVER CAN NOW ROAR THROUGH THE HEART OF THE CITY OF LIGHT WITHOUT STOPPING FOR A TRAFFIC SIGNAL. THE PRICE OF THIS PRIVILEGE HAS BEEN THE DESECRATION OF ONE OF THE MOST BEAUTIFUL SPOTS ON EARTH, THE BANKS OF THE SEINE.

"THE IRONY OF THE SITUATION IS THAT WHILE THE INSATIABLE AUTO GNAWS AT THE HEART OF PARIS, THE CITY'S UNDERGROUND SUBWAY PARALLELS ALL THESE NEW HIGHWAYS, CAPABLE OF HAULING PEOPLE WITHOUT THEIR CARS AND WITHOUT DISTURBING THE LANDMARKS OF THE CITY."

EVIDENCE OF THE NEED OF BETTER TRANSPORTATION BECAME APPARENT AT ABOUT THE TIME OF THE FIRST WORLD WAR. THE GOVERNMENTAL JURISDICTIONS IN THE GREATER PORTLAND AREA (THESE INCLUDED THE CITY OF PORTLAND, MULTNOMAH COUNTY, THE PORT OF PORTLAND, THE COMMISSION OF PUBLIC DOCKS, AND THE SCHOOL DISTRICT) RETAINED THE SERVICES OF ROBERT MOSES TO PREPARE A PLAN FOR THE FUTURE GROWTH OF THE CITY.

THAT REPORT WAS ONE OF THE FIRST COMPREHENSIVE PLANNING STUDIES IN THE AREA. IT RECOMMENDED A CROSSING OF THE WILLAMETTE RIVER SOMEWHAT DOWNSTREAM FROM THE SITE SELECTED FOR THE FINAL LOCATION OF THE FREMONT BRIDGE. THE HIGHWAY DEPARTMENT COMPLETED A STUDY IN 1955 WHICH INDICATED A NEED FOR A BRIDGE AT THE APPROXIMATE LOCATION FINALLY SELECTED.

OTHER MAJOR METROPOLITAN AREAS IN THE UNITED STATES WERE SUFFERING THE SAME TRIALS AND TRIBULATIONS

AS THE CITY OF PORTLAND. DURING THE PAST TEN YEARS, MANY, MANY FREEWAY NETWORKS HAVE COME INTO BEING. EXAMINATION WILL REVEAL A PATTERN WHICH IS ALMOST CLASSIC AND COULD BE FITTED, WITH MINOR MODIFICATIONS, DICTATED GENERALLY BY TOPOGRAPHY, TO MOST ANY MAJOR CITY IN THE UNITED STATES. IT CONSISTS OF A RATHER TIGHT, CONFINED INNER LOOP RATHER CLOSELY ENCIRCLING THE CENTRAL BUSINESS DISTRICT. IT ALSO INCLUDES AN OUTER LOOP WITH A RADIUS OF SEVERAL MILES, THE TWO LOOPS BEING CONNECTED BY LATERALS. WE HAVE THE PATTERN, THEN, OF THE HUB, THE RIM AND THE SPOKES OF THE WHEEL. THIS PATTERN HAS BEEN THE LIFESAVER OF THE METROPOLITAN AREAS.

IN PORTLAND, THE INNER LOOP IS FORMED BY THE STADIUM AND EASTBANK FREEWAYS. THE FREMONT BRIDGE WILL BE THE CLOSING OF THIS LOOP. THE OUTER LOOP IS TAKING SHAPE, BEING PARTIALLY FORMED BY THE CONSTRUCTION OF I-205 AND THE BEAVERTON-TIGARD FREEWAY. THE FINAL CLOSING OF THE OUTER LOOP IS IN THE PLANNING STAGE. IT INCLUDES EXTENSION OF THE BEAVERTON-TIGARD SECONDARY NORTHERLY INTO RIVERGATE AND THE DEVELOPMENT OF THE MARINE DRIVE FACILITIES FROM RIVERGATE TO I-205. THE SPOKES OF THE WHEEL WILL BE I-5 NORTH AND SOUTH, THE LOWER COLUMBIA RIVER HIGHWAY, CANYON ROAD, THE OSWEGO HIGHWAY, MCLOUGHLIN

BOULEVARD, THE MT. HOOD FREEWAY, AND THE BANFIELD FREEWAY, AUGMENTED BY MAJOR STREET ARTERIALS. THIS, THEN, IS THE BACKGROUND OF THE FREMONT BRIDGE.

FINANCING WAS ASSURED THROUGH THE INTERSTATE ACT. THE DESIGN STAGE APPROACHED AS THE PIECES OF THE SYSTEM WERE PUT IN SEQUENCE. THE PORTLAND AREA, THROUGH ITS ART AND ARCHITECTURAL COMMUNITY, EXPRESSED A DESIRE THAT SPECIAL ATTENTION BE GIVEN THE ARCHITECTURE OF THE FREMONT BRIDGE.

THE HIGHWAY COMMISSION RETAINED THE FIRM OF PARSONS, BRINCKERHOFF, QUADE AND DOUGLAS TO MAKE PRELIMINARY STUDIES AND RECOMMENDATIONS WITH RESPECT TO TYPE OF STRUCTURE. THIS FIRM IS ONE OF THE LEADING ORGANIZATIONS IN THE WORLD WITH RESPECT TO BRIDGE DESIGN. THEY WERE AIDED IN THIS STUDY BY THE ARCHITECTURAL FIRM OF HARRISON AND ABRAMOVITZ, WHO ARE EQUALLY PROMINENT.

THE CONSULTANT FIRM SUBMITTED SIX ALTERNATE DESIGNS, CONSISTING OF (1) A THROUGH CANTILEVER TRUSS, (2) A CONTINUOUS TIED-ARCH TRUSS, (3) A SELF-ANCHORED SUSPENSION SPAN, (4) A SINGLE-SPAN TIED ARCH, (5) AN ORTHOTROPIC DECK PLATE GIRDER, AND (6) A CONTINUOUS TIED-ARCH TRUSS. THE FIRST FIVE OF THESE PRESENTATIONS PROPOSED THE CONSTRUCTION OF TWO PIERS IN THE WILLAMETTE RIVER, WITH A CENTRAL SPAN OF 650 FEET. THE LAST HAD SHORE PIERS ONLY, WITH A CENTRAL

SPAN OF 1,135 FEET. THEY ALSO MADE AN ALTERNATE STUDY OF THEIR PROPOSAL NO. 5, THE ORTHOTROPIC DECK PLATE GIRDER, WITH A CENTRAL SPAN OF 1,135 FEET, LEAVING A CLEAR WATER-WAY FROM BANK TO BANK OF THE RIVER. FURTHER STUDIES, TWO IN FACT, WERE REQUESTED OF PBQ&D TO THE END THAT WE HAVE THE FINAL SELECTION OF STIFFENED, TIED-ARCH WITH ORTHO-TROPIC UPPER DECK.

AFTER FINALIZING THE TYPE SELECTION FOR THE MAIN SPAN, IT BECAME NECESSARY THEN TO CONSIDER THE PROBLEM OF THE APPROACHES. THE FIRM OF HOWARD, NEEDLES, TAMMEN AND BERGENDOFF WAS RETAINED TO MAKE THOSE DESIGNS. DUE TO THEIR COMPLEXITY AND INTERLACING, THESE PORTIONS OF THE STRUCTURE CAN ONLY BE SIMPLE SPAN TYPE CONSTRUCTION; HENCE, THE ALTERNATES COULD ONLY BE IN KINDS OF MATERIALS (EITHER STEEL OR CONCRETE) AND IN CONFIGURATION.

THE CONSULTANTS WERE GIVEN VERY SIMPLE INSTRUC-TIONS, NAMELY, (1) THAT THEIR DESIGNS MUST BE IN KEEPING WITH THE TYPE SELECTION FOR THE MAIN STRUCTURE, (2) THAT THEY SHOULD AVOID A TRESTLE-LIKE APPEARANCE, AND (3) THE DESIGNS SHOULD NOT BE EXOTIC TO THE POINT OF PRICING THEM-SELVES OUT OF THE MARKET. TO HAVE GIVEN ANY FURTHER IN-STRUCTIONS TO A FIRM OF THIS STATURE WOULD HAVE BEEN SOMEWHAT IN THE CLASS OF TELLING A BEE HOW TO MAKE HONEY.

THEIR ANALYSIS AND RECOMMENDATION DEVELOPED STRUCTURAL TYPES, BASICALLY WITH SINGLE STEM PIERS, HAVING A RECTANGULAR SHAPE WITH ROUNDED CORNERS. WHERE DOUBLE-DECKING IS NECESSARY, THE UPPER DECK IS SUPPORTED BY COLUMNS, EXTENDING UPWARD FROM THE CROSSBEAM OF THE LOWER ROADWAY. FOR WANT OF A BETTER NAME, I HAVE BEEN REFERRING TO THEM AS "TENNIS RACKETS" OR "BANJOS".

EVEN THOUGH UNIQUE, THIS CONFIGURATION IS NOT NEW OR ORIGINAL. SOME TIME PRIOR TO GIVING THIS ASSIGNMENT TO HOWARD, NEEDLES, TAMMEN AND BERGENDOFF, THE ENGINEERING NEWS RECORD CARRIED AN ARTICLE OF A DOUBLE-DECK STRUCTURE BEING BUILT IN TOKYO, UTILIZING THE SAME "BANJO"-TYPE PIERS FOR DOUBLE-DECK CONFIGURATIONS.

IN BRINGING THIS WHOLE COMPLEX TO FRUITION, WE HAVE BEEN FORTUNATE IN TWO PARTICULAR POINTS:

1. THE RATHER GENERAL DESIRE FOR BEAUTY, WHICH HAS BEEN EXPRESSED BY THE PUBLIC.

2. THE HIGH EMPHASIS THAT HAS BEEN PLACED ON SAFETY.

THE FIRST OF THESE FACTORS WAS INSTRUMENTAL IN FAVORABLE CONSIDERATION OF THE TYPE. THE SECOND WAS INSTRUMENTAL IN DETERMINATION OF THE WIDTH.

BY COMPARISON, THE MARQUAM BRIDGE IS A DOUBLE-DECK STRUCTURE, FOUR LANES EACH DECK, WITH A TOTAL WIDTH

OF 57 FEET BETWEEN CURBS. THE FREMONT BRIDGE, FOR THE SAME LANE REQUIREMENTS, WILL BE 68 FEET BETWEEN CURBS. THIS HAS BEEN BROUGHT ABOUT BY A MEETING OF THE MINDS OF THE HIGHWAY FRATERNITY THAT, CONVERSE TO THE PATTERN HERETOFORE PRACTICED, LONG-SPAN BRIDGES SHALL HAVE FULL WIDTH SHOULDERS.

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RECEIVED
MAR 28 1968

FOR FILING

I-405-8(17)303

7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
March 28, 1968

re Const Fed Aid Materials

SUBJECT:

To:

MEMO TO THE FILE

The approaching construction of the Fremont Bridge is of such magnitude that it appears certain policy decisions should be made with respect to material purchase and fabrication sites.

In the main span and the two approaches, a total of approximately 35,000 tons of steel will be used, at a total cost of $31,500,000. This breaks down into four items as follows:

1. Material Cost - 9 million dollars.

2. Fabrication Labor - 11 million dollars.

3. Erection Labor - 9 million dollars.

4. Painting - 2.5 million dollars.

Of these items, the first two only are of concern. The 9 million dollars for material is based on American steel. Price differentials would indicate a saving of 1.3 million if foreign steel were permitted to be used.

The second item of fabrication labor, totaling 11 million dollars, is a critical one. There are no firms in Oregon with sufficient capacity to handle this fabrication. In our estimation, there are four qualified United States firms -- namely, American Bridge, Bethlehem Steel, Murphy-Pacific, and Kaiser. Quite possibly, there are other large concerns having this capability but they are located along the East Coast and have not previously bid in Oregon.

We have no way of making a firm estimate as to the saving in cost if foreign fabrication were permitted.

We can only rationalize that due to difference in wage scales, as much as one-third might be saved. For a reasonable assumption, we placed this figure at 3.7 million dollars.

Due to the magnitude of the pieces which will be fabricated for inclusion into the bridge (many pieces will weigh in excess of 20 tons) we will permit painting at the assembly point except for final field spotting and field coats. In all practical analysis, it is probable that fabricated units will be shipped via ocean-going vessels, in the open, on deck. It would be our desire to hold this exposure to a minimum, in addition to using the maximum American labor.

In view of the above, we will prepare our specifications in such a manner as to permit the use of foreign steel, but require that all fabrication be performed in the continental United States.

Tom Edwards ja.

Tom Edwards
Assistant State Highway Engineer

TE:ja

cc Forrest Cooper
R. L. Porter
F. B. Klaboe
Victor D. Wolfe
Ivan Merchant
L. H. Young

RECEIVED

UNITED STATES GOVERNMENT

Memorandum

I-405-2(17)323
7276

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

477 Cottage St. NE. - Salem OR 97301

DATE: February 27, 1968

In reply refer to: 08-35.7

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

FROM : A. W. Parsons, Division Engineer, by G. R. Brooks, District Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(4)303, Fremont Bridge Section

Office Engineer L. H. Young's letter of February 16, 1968 forwarded for our approval revised right of way plan sheets numbers 3 and 4. Staff Attorney Jack L. Sollis' letter of February 21, 1968 forwarded for our review and approval copies of the use restrictions on files nos. 42242 and 42134.

Attached is approved plan sheet no. 3 for your files. We also concur with the use restriction documents submitted by Mr. Sollis covering files 42134 and 42242.

We are withholding approval of plan sheet no. 4 as the right of way shown for files 35105 and 35106 does not correspond with the air rights submission forwarded to this office with Mr. Sollis' letter of October 27, 1967. It is suggested that the plan be adjusted to correspond with the air rights proposal as outlined in Mr. Sollis' submission.

Enclosure
Plan sheet no. 3

NOTED
R. L. CARTER

NOTED
E. B. KLABOE

REFERRED TO
Young. Where.
BY ASST. STATE HWY. ENGR.
2-29-68

RECEIVED
FEB 29 1968
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
FEB 6 - 1968
FOR FILING

I 1165-8(17) 303
7276

SP*23811-734

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon 97213
January 25, 1968

SUBJECT:

To: Memo to the Files

On January 24, in response to a request from Mr. Porter, I met with Mr. R. C. Birkes, Head of Electrical Engineering for Pacific Power & Light Company. Also in attendance were Messrs. A. V. Benedict, J. H. Verstegi, and Mr. Birkes' staff of engineers.

The meeting was for the purpose of discussing a request by Mr. Birkes to Mr. Forrest Cooper that consideration be given Pacific Power & Light to install a high-tension power line on the Fremont Bridge.

Mr. Birkes explained that at the present time Pacific Power & Light has a cable crossing of the Willamette River at about Albina Avenue, and they had been advised by either the Port of Portland or Army Engineers that this line should be lowered to provide for river dredging. Information was given him that at the present time dredging would be performed to provide for a 40-foot channel, but that their cable crossing should be lowered to provide for a future 50-foot channel, or installed at an elevation of minus 50. The Albina substation for Pacific Power & Light is located on the east side of the river in the block bounded by N. Loring and N. River Streets and N. Lewis and N. Clark Streets.

Mr. Birkes advised that at the present time there were three circuits crossing the river with a present demand for more, and their plans included installing a minimum of six lines, and possibly 12, which would consist of five-inch conduit, either steel or plastic, if installed on the Fremont Bridge. Each 5-inch conduit would contain three-phase wires providing for 11 KV of electricity for each circuit. Grounded shields would be provided around the cables within the conduits. It was

NOTED
TOM EDWARDS

NOTED
TOM EDWARDS

RECEIVED
JAN 26 1968
OFFICE OF
STATE HIGHWAY ENGINEER

indicated that if such a line were installed on the bridge, possibly junction rooms would be required on the top of each pier at the terminals, and it was suggested that size should be in the neighborhood of 7 feet high, 8 feet long and 7 feet wide. Pacific Power & Light estimates that a 5,000 pull will be required to pull lines through each conduit.

Inspection of a sketch of the proposed bridge and plans for the piers indicated a line could be installed via the two piers nearest the river, and thence along the arch rib to the lower deck where it would be carried across the river. A second method would be to utilize the extreme easterly and westerly piers and carry the lines under either the lower or top deck.

The above information was conveyed to Mr. Merchant by telephone, and he indicated that in his opinion it would be preferable to carry such lines within the longitudinal box girders under the upper deck, as they would be quite visible if attached to the lower deck.

At the conclusion of the meeting, Mr. Birkes indicated that his staff would study the problem further and would prepare a cost estimate of materials required and contact this office further as to feasibility of utilizing the bridge. There is a possibility that Pacific Power & Light will elect to continue to use the river crossing at a lower elevation as a more economical installation.

Original Signed by A. E. Johnson

A. E. Johnson
Metropolitan Engineer

AEJ:sh

cc R. L. Porter
Tom Edwards
Ivan D. Merchant

PROGRAMS
DEC 28 1967
Portland

I-405-8(17)303
1
7976

December 28, 1967

Commission of Public Docks
3070 N. W. Front Street
Portland, Oregon 97210

R.W. File 35107 - NC
Fremont Bridge Section
Stadium Freeway

Gentlemen:

In reply to a request from your staff as to the clarifications of certain items that concern both the agreement that is to be on your January 4 agenda and the use restriction that we are presently negotiating with your staff, the following is offered:

1. The easement document for the two easements referred to in the agreement will be presented to the Commission on or before January 4 and it does provide that there will be no interference with the surface of the Dock Commission's property insofar as the permanent easement is concerned. However, there will be some interference with the portion of the surface of the Commission's property during construction but as per the terms of the agreement it will be restored to its original condition after construction.

2. Referring to the use restriction, there will be no restriction on the Commission's right to move rail or vehicle traffic across the area described in the use restriction.

3. When the terms of the use restriction are finally agreed upon between the Commission and the State Highway Department, we will have an appraisal made and will then negotiate for the compensation to be paid for the use restriction.

4. We cannot allow the fire marshal to decide whether or not the use restriction has been violated. However, we will set up a meeting in the first part of January with your staff, the fire marshal, and representatives of the Highway Department in order to work out the exact terminology of the use restriction.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc R. L. Porter
F. B. Klaboe
Victor D. Wolfe
George Rohde
cc White, Sutherland & Gilbertson

A. E. Johnson
D. H. Moehring
J. J. Smith

JLS:lf fn

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OCT 27 1967
FOR FILE

I-405-8(17)303
7276

October 24, 1967

Mr. Ivan D. Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge over the Willamette River

Dear Mr. Merchant:

This is to confirm our telephone conversation this morning concerning the new building being constructed on the former property of the Pacific Power and Lighting Company.

It is our understanding that this property, which is bounded by N. Hassam Avenue on the North and by the Fremont Bridge on the South, lies between approximate FB3 Station 346+20 and 348+05. The horizontal clearance from the structure varies from 30 to 40 feet and the vertical clearance is approximately 80 feet.

In view of the fact that this is a prefabricated steel panel building with a significant fire resistant rating, which will be used for steel storage purposes exclusively, we concur with you in your decision that the most practical solution is to place a deed restriction on the property and permit the owners to continue with the present construction. We still believe, as we stated in our letter to you dated April 19, 1967, that it will be necessary to restrict storage within this area - especially within the limits confined to the underside of the bridge.

If we can be of any further assistance to you in this matter, please do not hesitate to contact this office.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G Silano

L. G. Silano
Project Engineer

RECEIVED
OCT 26 1967
OFFICE OF
STATE HIGHWAY ENGINEER

LGS/cc

cc: Mr. T. Edwards ✓
Assistant State Highway Engineer

NOTED
TOM EDWARDS

RECEIVED
OCT 3 - 1967
FOR FILING

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

DATE: September 28, 1967

In reply refer to: 08-35.7/410.3

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

FROM : A. W. Parsons, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(4)303
Fremont Bridge Section
Parcels 35111, 35112, and 40964

Deputy State Highway Engineer R. L. Porter's letter of September 26, 1967 requests our concurrence in the proposed sale of the above-mentioned parcels to the Union Pacific Railroad Company. It is our understanding that the property in question will be left underneath the proposed Fremont Bridge structure, except for several parcels that will lie outside the right of way limits. We also understand that the sale of these properties would be subject to the same restrictions regarding air rights as the property that you will be acquiring from Union Pacific Railroad.

NOTED
F. B. KLABOE

We believe it would be advantageous in your negotiations with Union Pacific to trade these properties - subject to the air rights agreement - in partial exchange for the property to be acquired from them. For purposes of Federal participation concerning the above-mentioned parcels and the Union Pacific property you should follow the procedures outlined in paragraphs 1 o (4) through (6) and 1 p of PPM 80-3. We concur that such a trade or sale should not be made unless a negotiated settlement can be reached with the railroad. If a negotiated settlement cannot be consummated the property should be retained as part of the right of way.

As you are aware, the Director must approve rights of way of limited vertical dimensions, as outlined under paragraph 4c of PPM 80-5. Mr. Sollis of the Legal Section is presently preparing a submission concerning air rights and it would be appropriate for him to indicate that the areas to be traded will be covered by the air easement. Naturally, those areas lying outside of the right of way would not have the air rights restrictions imposed upon them. Therefore, while we concur that the proposed trade or sale should be considered in your negotiations, the final approval of a right of way of limited vertical dimension is subject to the Director's approval as required by Policy and Procedure Memorandum 80-5. The necessity to secure

(more)

10-2-67
REFERRED TO
Morgan - Rohde - Sollis - Young - McStrong
BY ASST. STATE HWY. ENGR.

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

the Director's approval can proceed concurrently with your present negotiation with the railroad in order to avoid any delays in consummating a settlement, or if necessary filing a condemnation action.

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SEP 29 1967
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
SEP 26 1967
FOR FILING

I-405-8(17)303
7276

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

DATE: September 20, 1967

In reply refer to: 08-35.7

FROM : A. W. Parsons, Division Engineer
Salem, Oregon

A.W. Parsons

SUBJECT: Oregon Project I-405-8(4)303, Fremont Bridge Section

Returned are approved copies of revised right of way plan sheets nos. 2, 3, and 4 for the above-mentioned project.

Regarding Parcels 36087, 35105, and 35107 it will be necessary for the State to submit for approval of the Director in Washington, D.C. acquisition of rights of way of limited vertical dimensions, as required by paragraph 4c of PPM 80-5. Action on your submission should be initiated through this office as soon as your plans are solidified to the point that you can provide the information needed as outlined in Attachment 3 of PPM 80-5.

Plan sheet no. 3, Parcel 35109, which is outlined in blue, does not comply with your bridge consultant's recommendation as to adequate right of way for fire protection of the structure. You should take immediate steps to prepare plans and secure our approval to acquire the additional needed width for the area lying westerly of North Loring Street. It is our understanding that the area immediately adjoining Parcel 35109 is unimproved.

Enclosures
Plan sheets

9-25-67
orig to Morgan-R/W w/encls.
copy to Young
Moehring

RECEIVED
SEP 22 1967
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

NOTED
R. KLABOE

SAVE LIFE AND PROPERTY
THINK
45 E 0 5 .8(17)303
7276

PHONE: 228-6141
EXT. 485

CITY OF PORTLAND, OREGON

BUREAU OF FIRE
FIRE PREVENTION DIVISION
88 S.W. ASH STREET
JAMES H. RIOPELLE, FIRE MARSHAL

STANLEY W. EARL
COMMISSIONER
DALE F. GILMAN
CHIEF

August 25, 1967

RECEIVED
THE COMMISSION OF PUBLIC DOCKS
PORTLAND, OREGON
AUG 28 1967
OPER.
ACCOUNT ENGR.
FILE

Mr. A. M. Eschbach, Chief Engineer
Commission of Public Docks
3070 N. W. Front Avenue
Portland, Oregon 97210

Dear Al:

I have reviewed the contract agreement proposed by the State of Oregon setting forth USE RESTRICTIONS of "Parcel A", a tract of about 51,000 square feet adjacent to the west approach of the Fremont Bridge structure.

I concur with the State's judgment that there must be adequate provision to protect the bridge structure from fire exposure. The Portland Building Code recognizes this need as it defines the area within 100 feet of bridge structures as being part of Fire Limits No. 2, where building code requirements for high value areas are more rigorous to protect against fire. However, the building code does not control the use of the "open land" sufficiently, in my judgment, to protect overhead unprotected steel structures from fire.

It would be very difficult from an engineering standpoint to actually calculate maximum allowable "fire fuel loads" which could safely be stored under a bridge structure because of the many uncontrolable variables, including the kind of fuel, pile density, the manner of piling, weather, etc. Furthermore, it would be most difficult to administer and regulate the changing conditions of use. Therefore, it is my judgment, the application of conservative guidelines would be a better approach to assure safety for the structure and afford more productive use of the land.

In reviewing the State's proposed agreement, it appears paragraphs No. 1 and 2, setting forth strict use restrictions are so all inclusive they practically prohibit the use of the land. The objective of the State can be accomplished by using more definitive language. Also, I acknowledge the need and the intent of paragraph 5, of the USE RESTRICTIONS, but again would suggest rewording.

May I suggest for your consideration the following language might be used:

(1). No part of Parcel A shall be used for the manufacture, storage, keeping or holding in bulk of flammable liquids and gases, combustible liquids, combustible chemicals, combustible metals, combustible plastics, or explosives of any kind.

(2). No part of Parcel A should be used for the storage, at any one time, of combustible cargos like lumber, lumber products, combustible fibers, and paper products, in individual or combined total amounts in excess of one carload lot.

(5). No persons shall erect a building on Parcel A without approval of the State as to its intended use, type of construction, and manner of fire protection. Any building erected on Parcel A should be of Type I, Fire Resistive construction and for a use which will not cause a fire exposure to the overhead bridge structure; the State shall have authority to make this determination, except as otherwise provided in this agreement for structures of limited size.

(X). None of the forgoing limitations shall prohibit the use of combustible dunnage materials or combustible pallets on Parcel A; however, Parcel A shall not be used as a storage area or depot for combustible dunnage and combustible pallets not immediately necessary to handle cargo or storage materials on Parcel A.

(X). None of the forgoing restrictions on flammable and combustible liquids shall prevent the storage of automobiles and other gasoline or diesel fueled vehicles, in any number, on Parcel A except that no flammable liquids tanker, combustible liquids tanker, or flammable gas tanker shall be stored, serviced, or repaired on Parcel A.

(X). Combustible super-structures on Parcel A shall be limited to one building 1,000 square feet in floor area and not over one story in height and shall be of not less than one hour fire resistive construction; except, that one combustible one hour fire resistive structure protected with automatic sprinklers may be erected not to exceed one story or 25 feet in height if not to exceed 5,000 square feet in floor area.

May I pass on a few fire protection experience observations which may be helpful to you and the State in concluding a reasonable agreement for the use of Parcel A.

Automobiles in storage with fuels in tanks, except where they are in places of public assembly or where persons must be assured safe exiting, like in public parking, or in underground structures, or in unventilated garages, do not present a sizeable fire hazard, certainly not of sufficient magnitude to imperil an incombustible bridge structure. This would be true of any type of non-combustible cargo storage such as pipe, steel shapes, heavy machinery, etc. We should also observe that the dunnage and packing materials associated with heavy machinery would not contribute sufficient fuel to imperil the bridge structure.

It should be observed that a large shipment of products in fiberboard boxes, if of considerable mass could produce a sizeable fire and would require restriction. Generally speaking, if cargo in any amounts were comprised of free-burning plastics, combustible fibers, combustible metals, hazardous chemicals, pulverized fuels, feed and flour cargos, sulpher cargos, woodworking plants, and lumber manufacturing and storage, careful limitation in amounts would be necessary. For this purpose Ammonia Nitrate should be regarded as a blasting agent.

It is my judgment that a Type I structure, which is both fire resistive and non-combustible, (e.g. reinforced concrete structures) having no openings within 25 feet of the bridge, could be used to successfully store combustible fibers and combustible products without peril to the bridge structure.

If there is a combustible pier or warf sub-structure extending beneath the bridge it should be protected to the levels called out in NFPA Standard No. 87, 1963 Edition, Chapter 3.

If there is a pier or warf structure beneath the bridge and it is to carry a super-structure of more than 1,000 square feet floor area, it should be fire resistive and non-combustible with protected wall openings. Generally the criteria of Chapter 4 NFPA No. 87 (1963 Edition) should apply.

Summary

The State is right in assuring that no person erect a structure or place combustible loadings beneath or adjacent to their bridge structure which could imperil the bridge.

The State's proposed USE LIMITATIONS AGREEMENT can be modified to permit more economic use of the land and at the same time assure safety to the structure.

Any time a property is zoned or placed within an inner-fire limits the owner suffers a more restricted use of his land and is required by Code to build more expensive fire resistive structures. This is a nationally recognized fire safety practice.

Yours truly,

James H. Riopelle

JAMES H. RIOPELLE
Fire Marshal

JHR:br
Enclosure

AUG 17 1967

I-405-8(17)303
7276

RECEIVED
AUG 16 1967
LEGAL & RIGHT OF WAY

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

5821 N. E. Glisan Street
August 15, 1967

To: MEMO TO THE FILE

SUBJECT: File No. 35107 - City of Portland Dock Commission
Fremont Bridge Section
Stadium Freeway
Multnomah County

NOTED
F. B. KLABOE

The attached photos refer to Memo to the File of August 7, 1967, on subject property. These photos are representive of the condition existing on August 8, 1967.

J. J. Smith
J. J. SMITH
DISTRICT RIGHT OF WAY
SUPERVISOR

JJS:jr

Attachments

cc: Mr. A. E. Johnson
Mr. D. H. Moehring
Mr. G. E. Rohde
Mr. I. D. Merchant
Mr. F. B. Klaboe
Mr. J. L. Sollis

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AUG 16 1967
OFFICE OF
STATE HIGHWAY ENGINEER

No. 1
View of Parcel "A" looking North from Front Ave. Sheerboom crane in background overhangs the harbor line.

No. 2
Cargo pallets and lumber on Parcel"A" on August 8, 1967. Raised area is built on piling with a wooden substructure and is reported to be sprinkled on the underside. This information from Mr. Eschbach, Dock Commission Engineer.

No. 3
Another view of pallets in Parcel "A"
on August 8, 1967

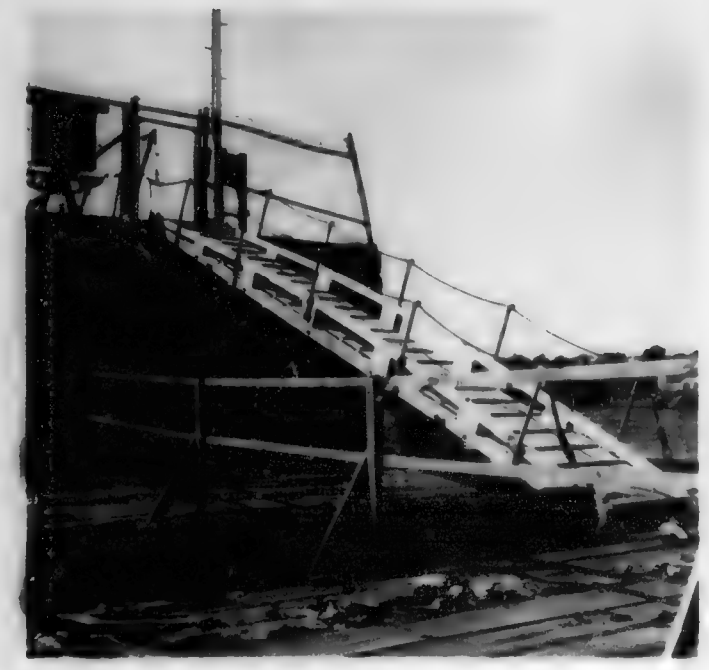
No. 4
Creasote treated timber in Parcel "A".

No. 5
Steel beams on Parcel "A".

No. 6
Miscellaneous storage in Parcel "A".

No. 7
Railcars stopped in area adjacent to Parcel "A" waiting to be unloaded. This is typical type of cargo passing through Parcel "A". In this instance cargo is wire on large spools.

No. 8
Gate at Northeast corner of Parcel "A" for access to upstream dolphin located on SP & S property.



No. 9
Gangway from gate in Picture No. 7

No. 10
View of gangway looking West from
SP & S property.

No. 11
Stairway at Northwest corner of SP & S building for Dock Commission access to dolphin.

No. 12
Walkway along harbor line on SP & S property for Dock Commission access to upstream dolphin.

No. 13
Dolphin installed by Dock Commission for forward spring lines necessary when shearboom crane is loading or unloading after holds on large cargo ships. Note mark on walkway indicating proposed cutoff point of SP & S building.

No. 14
Closeup of Dock Commission Dolphin.

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AUG 15 1967
FOR FILING

F. B. Kleboe

I-405-8(17)303
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

5821 N. E. Glisan Street
August 7, 1967

RECEIVED
AUG 9 1967
LEGAL & RIGHT OF WAY

To: Memo To The File

SUBJECT:

File No. 35107 - City of Portland
Dock Commission
Fremont Bridge Section
Stadium Freeway
Multnomah County

A meeting was held today with the City of Portland Dock Commission at their office on Front Avenue. Present at the meeting and representing the Commission were Al Eschbach, Chief Engineer, Keith Hansen, Assistant General Manager, Curtis Smith, Operations Manager and Bruce Taylor, Right of Way Agent. Present and representing the State of Oregon were Al Johnson, Metro Engineer and myself. The meeting started at approximately 10:45 and continued until about 12:15.

Keith Hansen opened the meeting with the statement that the Use Restriction Instrument dated 7-12-67 which was presented for their consideration to Bruce Taylor about a week ago was not acceptable and in its present form would not be signed by the Dock Commission. The principal objection is contained in Item 1 and revolves around the use of the word inflammable. Mr. Hansen stated that under the interpretation of this word "inflammable" practically nothing could be stored in the area designated as "Parcel A". Further in Item 2 they object to the words "any burnable substances". Once again Mr. Hansen feels this would eliminate all of the cargo which they would normally store in this area. Curtis Smith, the Operations Manager, had some objection to Item 3. He wondered if fumes or smoke emanating from a ship tied up in this area were covered by this item. He was told that this instrument referred only to Parcel A and would not pertain to any ship moored at the dock. Mr. Eschbach stated that he had conferred with the Commission and they indicated that they would cooperate with the Highway Department, however, if we insisted upon using this particular Use Restriction Instrument we would have to start a condemnation action. I assured Mr. Eschbach that we are not trying to apply pressure on the Dock Commission and the restriction would be changed if we could arrive at mutually acceptable terms. It was finally decided that Mr. Eschbach and his assistants would make a list of cargo which they would want to store in the restricted area. They volunteered that they would use the services of Fire Marshall Riopelle and ask his advice as to acceptable conditions and amounts of material which if stored in Parcel A would not constitute a threat to our proposed bridge. When the list is completed they will submit it to us for our consideration. Mr. Smith was assured that our restrictions would not in any way hamper their use of the railroad tracks which go through the restricted area.

He was also assured that short of stopping a train in the area with volitile or explosive material, normal cargo could move through the area and, if necessary, remain on the cars waiting to be loaded upon a ship.

The question of clearance to moor a ship under the new structure was discussed. It was disclosed by Mr. Eschbach that they now have an agreement with SP&S whereby they have access parallel with the river and adjacent to the harbor line from their property line to a dolphin which is approximately 16' beyond the point we propose to sever the SP&S building. This apparently is the first time that this arrangement between the railroad and the Dock Commission has been made known to the Highway Department. Al Johnson was not aware of it nor have I ever heard of it.

It was decided that we should go upon the site and inspect present facilities. Mr. Eschbach and Mr. Smith, Al Johnson and myself made the trip. We looked at the dolphin and the access to it from the port dock commission area. At the present time access is through a locked gate down a ships gangway and then up a stairway, on the river side of the railroad building and then down the warf area to the dolphin. Mr. Eschbach stated that when this portion of the building is removed, the Dock Commission would be satisfied if allowed access to the dolphin so that the spring lines of a ship could be attached.

Our inspection showed that within the restricted area the Dock Commission presently has stored an accumulation of wooden pallets, some of which are in need of repair. There is also a small amount of steel beams and pipes and a relatively small quantity of cresote-treated timbers. It was agreed that Al Johnson will supply the Dock Commission with a profile of the bridge at the harbor line so that the Dock Commission can determine if there will remain enough clearance for them to moor ships in the area. Al Johnson also agreed to have the restricted area staked for the Dock Commission's benefit.

During the time we were on the site, a cargo ship was moored down stream from the bridge site and it was estimated that the top of the mast was approximately 100' above the water line. At that time the water level was approximately 6' above datum level. During high water, the level can be expected to raise to approximately 20' above datum.

It is my intention to extensively photograph this area and the material presently stored there. I will also have the dolphin and the access to it photographed for record purposes. When the photographs are finished several sets will be forwarded to Salem.

J. J. SMITH
District Right of Way
Supervisor

JJS:mb
cc A. E. Johnson
D. H. Moehring
G. E. Rohde
Ivan Merchant
F. B. Klaboe
Jack Sollis

RECEIVED
AUG 9 - 1967
OFFICE OF
STATE HIGHWAY ENGINEER

FORM E-30 50M 10-65

NOTED
H. S. COX

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
July 26, 1967

SUBJECT: Agreement with City of Portland for Fremont Bridge and Approaches

To: Mr. F. B. Klaboe
Asst. State Highway Engineer
Administration

Building

RECEIVED
JUL 31 1967
ENGINEER
COUNTY & CITY DIVISION

From looking at the right of way maps, it appears to me that we are placing a pier in Russell Street just West of the alley, which is West of Larabee Avenue. We are also placing a pier in Knott Street just East of the intersection of Knott and Larabee. These two piers are on the East end of the Fremont Bridge.

On the West end of the Fremont Bridge we are placing a pier at the intersection of 14th Avenue and Northwest Thurman and are going to build a connection between those two streets Westerly of the pier.

We are also going to relocate the grade crossing of the railroad tracks at 14th Avenue and Thurman, part of which is a public street.

There may be other piers located in the street on both the East and West end, but I am not familiar with anything other than the ones concerned in the files that I am negotiating on.

It would appear that a study should be made to see exactly what streets will be affected by our piers and what street relocations are necessary, and that City and County should be given this information so that they may commence negotiations with the City of Portland for the construction of these piers in their streets and the other related street relocation and grade crossing relocation work.

Jack L. Sollis
JACK L. SOLLIS
Staff Attorney

JLS:ja

cc: R. L. Porter
G. E. Rohde
Frank C. McKinney
Ivan Merchant

NOTED
F. B. KLABOE

RECEIVED
AUG 4 - 1967
OFFICE OF
STATE HIGHWAY ENGINEER

7-31-67
Referred to Cox w/note to assemble info and start things rolling.
cc: Morgan
Merchant
FBK

REFERRED TO

BY ASST. STATE HWY. ENGR.

RECEIVED
JUL 27 1967
OFFICE OF
STATE HIGHWAY ENGINEER

Working on this with Merchant — NOTED

RECEIVED
JUL 31 1967
FOR FILING
I-405-8(4)303
7276

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Bureau of Public Roads
477 Cottage Street NE.
Salem, Oregon 97301

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

DATE: July 21, 1967

In reply refer to: 08-35.7

FROM : A. W. Parsons, Division Engineer
Salem, Oregon

By: C. J. Mathias
Division Right of Way Officer

SUBJECT: Oregon Project I-405-8(4)303
Fremont Bridge Section

Office Engineer L. H. Young's letter of March 14, 1967 transmitted two copies of Revised Right of Way Plan Sheets Nos. 2, 3, and 4. Approval of these plan sheets has been withheld as it is our understanding that descriptions have been changed on Parcels 36087, 35108, and 35105. It is requested that the plans be reviewed and, where necessary, changed to fit the new right of way descriptions.

Enclosure
Right of Way Plans

NOTED
F. B. KLABOE

orig w/enc to young
copy to Moehring
7-26-67

RECEIVED
JUL 24 1967
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
JUL 6 - 1967

UNITED STATES GOVERNMENT

Memorandum

I-405-8(17)303

727

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

FROM : A. W. Parsons, Division Engineer
Salem, Oregon

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

DATE: June 30, 1967

In reply refer to: 08-35.6

SUBJECT: Oregon Project I-405-8(1)301
Fremont Bridge

With reference to Mr. Edwards' June 9 letter, the use of 10-foot shoulders both on the left and right of the main spans of the Fremont Bridge is approved.

Copy - Klaboe
Merchant
Young
Crandall
1-6-67
copies to Morgan
Cox

NOTED
TOM EDWARDS

RECEIVED
JUL 5 1967
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
F. B. KLABOE

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
JUN 12 1967
FOR FILING
I-405-8(17)303
7276

June 9, 1967

Mr. A. W. Parsons
Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon

Dear Sir:

The approved cross section on the Fremont Bridge on Interstate 405 has been restricted to 59 feet by previous action of the Bureau. This resolves itself into a four-foot shoulder on one side and a seven-foot shoulder on the other. The weaving problem on this bridge is not good, at best. I quote from the second paragraph on page 279 of AASHO's Policy on Geometric Design of Rural Highways as follows:

> "On divided highways having three or more lanes in each direction a driver in distress in the lane nearest the median might have difficulty maneuvering to the right-hand shoulder. Consequently a full width shoulder, 8 to 10 feet, within the median is desirable on divided highways having 6 or more lanes."

From the "yellow book" (AASHO's Highway Design and Operational Practices Related to Highway Safety) which has become "gospel", on page 34, we quote:

> "...To assure safer operation at structures, it is recommended that the full shoulder width be carried across all structures..."

Reiterating, the weaving problem on this structure will be extreme at best. The traffic demand will increase over any previous prognostications inasmuch as this structure will be in service 50 to 75 years, rather than the normal 20-year design period.

It therefore seems that the Bureau's decision to restrict this shoulder width to the four- and seven-foot combination is in violation of the safety practices quoted in the foregoing paragraphs. We therefore request your reconsideration of this cross section to allow 10-foot shoulders each side.

Detailed design has not proceeded to the point where any appreciable amount of work must be redone, but we would appreciate your early decision in this matter.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

TE:ja

bc Forrest Cooper
R. L. Porter
F. B. Klaboe
Victor D. Wolfe
F. B. Crandall
Ivan Merchant
L. H. Young

APR 5 - 1967

FOR FILE

I-405-8(17)303
7276

April 4, 1967

Mr. Fred S. McKnight, Chief
Air Traffic Branch
Federal Aviation Agency
F.A.A. Building
Boeing Field
Seattle, Washington 98108

5512
5613

Re: Air Obstruction Lighting
Fremont Bridge, Interstate 405
Bridge No. 2529

Dear Sir:

Enclosed are six copies of the notice of the proposed construction of the Fremont Bridge on the Stadium Freeway, Interstate Route 405, over the Willamette River in Multnomah County, in the city of Portland, Oregon. Two attachments to Form FAA-117 show the location of the bridge and give pertinent details of its physical features.

The contract for the construction of the superstructure will be advertised early in 1968 and it is, therefore, essential that air obstruction lighting to be placed on the main arch span be specified and approved as soon as possible.

A revised War Department permit allowing the construction of the structure as indicated on Sheet 2 of the attachments has been requested from the District Engineer of the U. S. Corps of Engineers in Portland.

Your early consideration of air obstruction lighting would be appreciated.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant

Attachments

IDM:mb ja

Form approved; Bureau of Budget No. 04-R001.1

FEDERAL AVIATION AGENCY

NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION

PART 626, REGULATIONS OF THE ADMINISTRATOR

NAME OF INDIVIDUAL, COMPANY, CORPORATION, ETC., PROPOSING CONSTRUCTION OR ALTERATION DESCRIBED BELOW

STATE OF OREGON, STATE HIGHWAY DEPARTMENT

ADDRESS (Number, Street, City, Zone, State)

SALEM, OREGON 97310

A. TYPE OF STRUCTURE

1. CHECK APPLICABLE ITEM

☒ NEW CONSTRUCTION ☐ ALTERATION (Change in height only) ☒ PERMANENT ☐ TEMPORARY

2. NATURE AND COMPLETE DESCRIPTION

Bridge carrying the Stadium Freeway (Interstate Route 405) over the Willamette River in Multnomah County, Portland, Oregon. The main span of this 8-lane, double decked, stiffened tied arch is 1255'-4" long and the side spans are 448'-4" long. The main span arch will rise 384 feet above City of Portland datum. See attached sketches.

B. LOCATION OF STRUCTURE (Submit a map or sketch)

1. LATITUDE	2. LONGITUDE	3. NEAREST CITY OR TOWN, AND STATE	4. RELATION TO NEAREST TOWN OR CITY	
			DIRECTION	DISTANCE
45°-32'-15" (To nearest second)	122°-41'-00"	Portland, Oregon	In City of Portland (See Map)	

5. NAME OF NEAREST LANDING AREA	6. RELATION TO NEAREST BOUNDARY OF LANDING AREA	
	DIRECTION	DISTANCE
Portland International Airport	N 55° E	24,000 feet

7. PROVIDE THE LAND RECORDER'S MAP DESCRIPTION AND/OR LEGAL DESCRIPTION BY METES AND BOUNDS OF PROPERTY ON WHICH STRUCTURE WILL BE OR IS LOCATED (If more space is necessary, use reverse side or continue on a separate sheet of paper and attach to this notice.)

NOT APPLICABLE

8. DATE WORK WILL BE STARTED	9. DATE WORK WILL BE COMPLETED	10. OVERALL HEIGHT (IN FEET) OF COMPLETED STRUCTURE ABOVE		
		A. GROUND LEVEL	B. MEAN WATER LEVEL (IF SO SITUATED)	C. MEAN SEA LEVEL
Approximately January 1, 1968	Approximately January 1, 1970	Not Applicable	384 feet above ~~City of Portland~~ Datum	Not applicable

11. CHECK WHETHER COMPLETED STRUCTURE WILL BE	YES	NO
A. MARKED FOR THE PROTECTION OF AIR NAVIGATION		X
B. PAINTED AS SPECIFIED IN OBSTRUCTION MARKING MANUAL		X
C. LIGHTED AS SPECIFIED IN OBSTRUCTION MARKING MANUAL	X	

C. CERTIFICATION: I hereby certify that all of the above statements made by me are true, complete, and correct to the best of my knowledge.

DATE	SIGNATURE OF PERSON MAKING CERTIFICATION	TITLE
April 4, 1967	ORIGINAL SIGNED TOM EDWARDS	Assistant State Highway Engineer

GPO 939165

Form FAA-117 (11-60)

PROPOSED HIGHWAY BRIDGE
OVER THE
WILLAMETTE RIVER
INTERSTATE 405 STADIUM FREEWAY
LOCATION MAP

APPLICATION BY OREGON STATE HIGHWAY DEPARTMENT

MARCH, 1967

SHEET 1 OF 2

P Guild DLC

Stone DLC

Couch DLC

WILLAMETTE RIVER

PROPOSED FREMONT BRIDGE

RIVER

Albina

PORTLAND

BRIDGE

Milwaukie

WASHINGTON

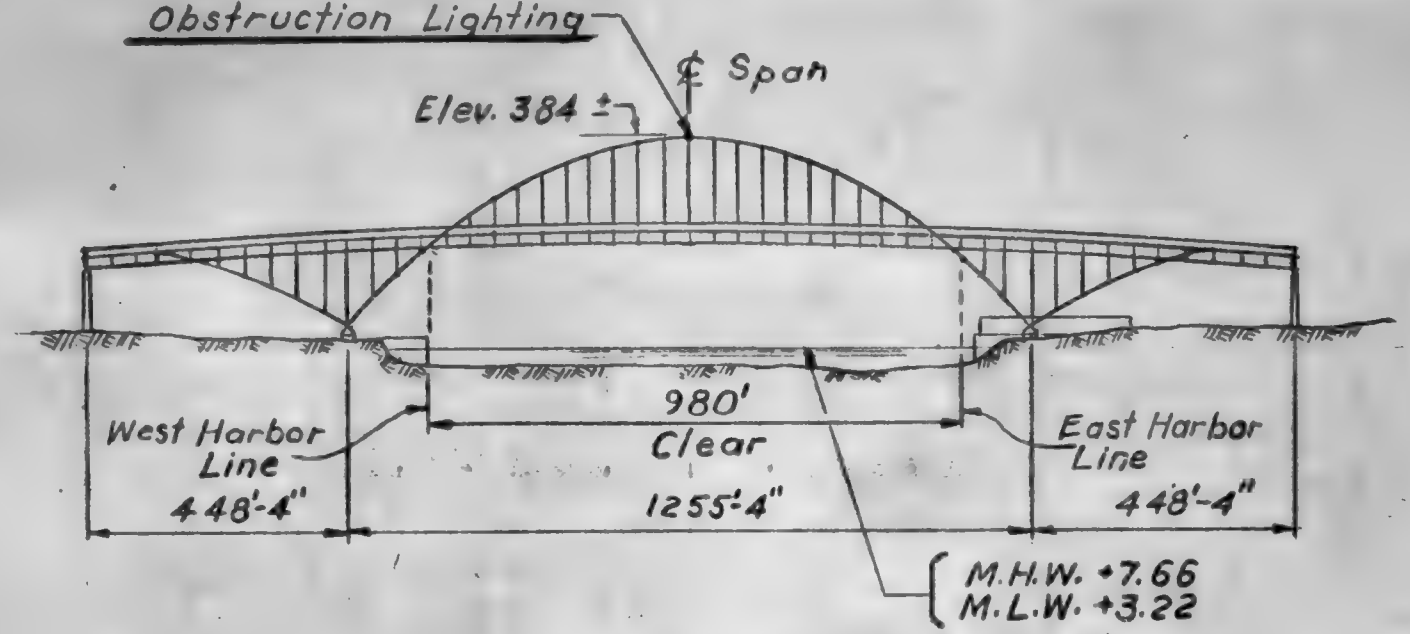
OREGON

Columbia River

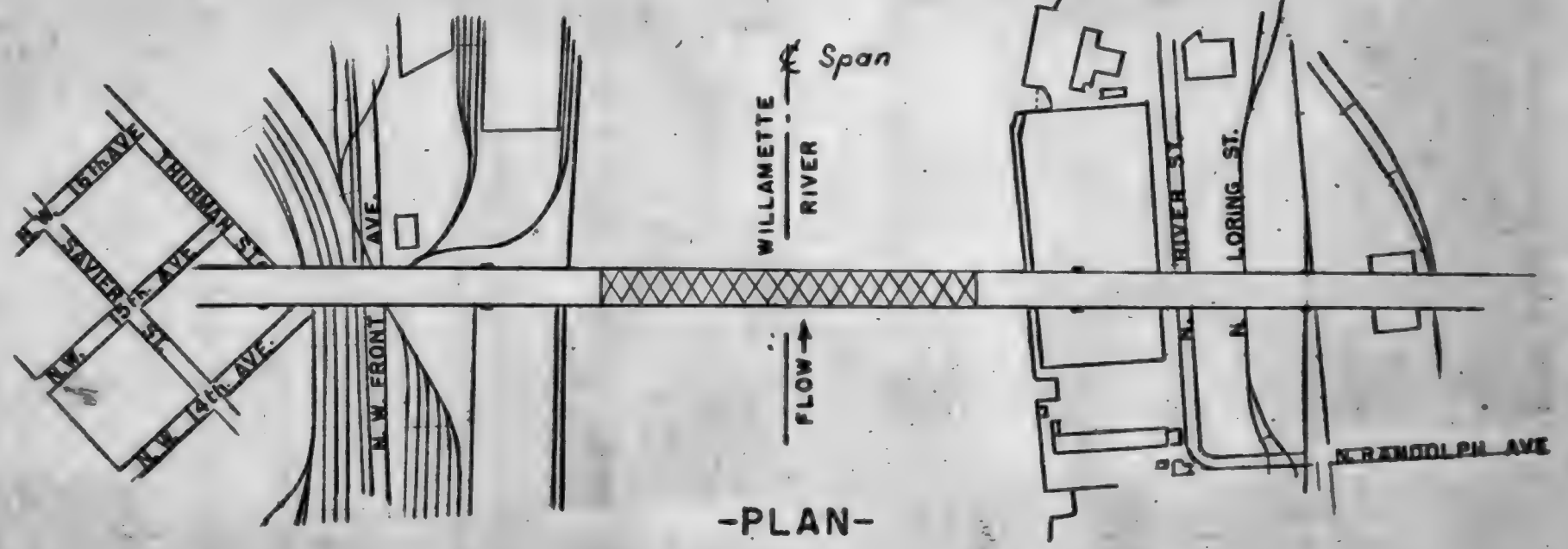
1" = 4.5 Miles

1" = 0.1 Mile

Obstruction Lighting



-ELEVATION-



-PLAN-

SCALE: IN FEET

0 50 100 200 400

PREPARED BY
PARSONS, BRINCKERHOFF, QUADE & DOUGLAS INC.
ENGINEERS NEW YORK

PROPOSED HIGHWAY BRIDGE
OVER THE
WILLAMETTE RIVER
INTERSTATE 405 STADIUM FREEWAY
PLAN & ELEVATION

APPLICATION BY OREGON STATE HIGHWAY DEPARTMENT

MARCH, 1967

SHEET 2 OF 2

EAA-5

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS
CONTINUING THE ENGINEERING PRACTICE
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-8300

MAURICE N. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. SICKEL
EUGENE L. MACDONALD

Mr. Ivan D. Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

March 24, 1967

Re: Fremont Bridge - Portland

Dear Sir:

Enclosed please find seven (7) copies of Form FAA-117 together with attachments and a draft of a letter of transmittal. One copy, the original, is for your files and the other six copies should be signed, dated and forwarded to the Federal Aviation Agency. Please note that five (5) copies should go to the Chief of the Airspace Utilization Branch of the F. A. A., and one (1) copy to the local F. A. A. office.

The reply, naturally, will be made directly to you and you should forward it, or a copy of it, to us, so that we may act in accordance with instructions of the F. A. A.

Best regards.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano
Project Engineer

LGS:tak
enclosures
via airmail

cc: Mr. Tom Edwards - Assistant State Highway Engineer - with enclosures

RECEIVED
APR 3 1967
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
HIGHWAY DEPT.
BRIDGE DIVISION
AM MAR 27 1967 PM
7,8,9,10,11,12,1,2,3,4,5,6

RECEIVED
MAR 27 1967
OFFICE OF
STATE HIGHWAY ENGINEER

SUGGESTED DRAFT

Federal Aviation Agency

Dear Sir:

We are enclosing five (5) copies of the notice of the proposed construction of the Stadium Freeway, Interstate Route 405 over the Willamette River in Multnomah County, in the City of Portland, Oregon. Two (2) attachments to Form FAA-117 show the location of the bridge and give pertinent details of its physical features.

The contract for the construction of the superstructure will be advertised early in 1968 and, therefore, it is essential that obstruction lighting ~~be included on the~~ be specified and approved as soon as possible.

We would appreciate your early consideration of this notice.

Yours very truly,

OREGON STATE HIGHWAY DEPARTMENT

enclosures

RECEIVED
APR 3 1967
OFFICE OF
STATE HIGHWAY ENGINEER

BRIDGE DIVISION
MAR 27 1967
AM 7,8,9,10,11,12,1,2,3,4,5,6 PM

RECEIVED
MAR 27 1967
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAR 24 1967
FOR FILING

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

477 Cottage Street NE.
Salem, Oregon 97301

DATE: March 20, 1967

In reply refer to: 08-35-DA

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

I-405-8(17)303

FROM : T. Doc, Assistant Division Engineer
Salem, Oregon

T. Doc

3-24-67
Eyler - Merchant
REFERRED TO
Young - Zetterberg - please see me.
BY ASST. STATE HWY. ENGR
Barbur

SUBJECT: Oregon Project I-405-8(4)303
Fremont Bridge Section
Parcels 35107 and 35108

Mr. Moehring's letter of January 17 and 25, 1967 requested our approval to allow a warehouse building (Parcel 35108) to encroach on the right of way. A review by your bridge consultant indicated that the building would constitute a fire hazard to the Fremont Bridge. Based on his findings we concur with your proposal to acquire additional right of way between the East Harbor Line and North River Street as outlined on right of plan sheet 3, which was forwarded to this office by Mr. L. H. Young's letter of March 14, 1967. This will require additional right of way negotiations with the property owner.

Your bridge consultant remarked at a recent meeting that a 50-foot clearance should be provided for on each side of the structure around the piers even if it means a permanent taking or a permanent restrictive right of way agreement. The consultant indicated that he will make some definite recommendations as to how the structure should be protected. It would appear premature to authorize any negotiation until his report is submitted unless you intend on purchasing or have enforceable restriction for right of way 50 feet on either side of the bridge for its entire length. This appears to be a desirable solution.

It should also be pointed out that the center line from the West Harbor Line to Northwest Front Avenue appears to be in error on the bridge consultants General Plan, PD-1. It does not agree with the location of the center line on sheet 4 of the revised right of way plans.

It is also noted that the right of way plans do not include provisions for the proposed railroad crossing for the connection of Northwest 14th Avenue and Northwest Thurman Street with Northwest Front Avenue. We understand that a relocation is proposed by the railroad consultant. We feel that no decision can be made on either side of the river in the railroad areas until the consultants report is received.

We also assume that you have taken into account the freeway drainage sewer proposed on the west side of the river.

NOTED
F. B. KLASOE

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

5

RECEIVED
MAR 13 1967
FOR FILING
I-405-8(17)303
7276

COMMISSIONERS
KENNETH N. FRIDLEY, MEMBER
PORTLAND
DAVID B. SIMPSON, MEMBER
PORTLAND

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

March 9, 1967

Mr. A. W. Parsons
Division Engineer
Bureau of Public Roads
477 Cottage St., N.E.
Salem, Oregon

Subject: Fremont Bridge
Interstate 405
I-405-8(1)301
Br. No. 2529

Dear Sir:

The engineering contract with Parsons, Brinckerhoff, Quade and Douglas for the preparation of plans, specifications and estimates for the Fremont Bridge requires the preparation of functional plans of the bridge for review and approval prior to the completion of final contract plans.

At a meeting in the Highway Building on March 8, 1967, the consultants handed the State six copies of Sheets 1 through 5, inclusive, which are the functional plans for the structure. Also at this time, the consultants handed the State two copies of the foundation report prepared for them by Dames & Moore indicating additional foundation conditions. Three copies of the functional plans and one copy of the foundation report were handed to members of your staff at this meeting. One additional set of prints of the functional plans and three additional copies of the foundation report will be sent you as soon as received from the consultants.

Would you please review the functional plans in conjunction with the foundation report and advise us of your concurrence in the plans and the foundation report or with your comments, at your earliest convenience.

It should be noted that the submission of the functional plans for review and approval by all agencies involved was to be within two months after receipt of written notice to proceed under the engineering contract. The Dames & Moore report was unavoidably delayed which, in turn, delayed the submission of the functional

NOTED
JOM EDWARDS

plans by the consultants; however, the consultants advise that they can have the substructure plans, specifications and estimates in time for final review by all agencies so that a contract for pier construction can be called for on November 30, 1967.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

IDM:rmh
cc: Tom Edwards
C. H. Hainen
L. H. Young

RECEIVED
MAR 7 - 1967

FOR FILING

I-405-8(17)303
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
March 2, 1967

To: C. H. Maisen
Controller
Accounting Division
BUILDING

SUBJECT: Demolition Contract -
Fremont St. Connection to
I-5 Sec., and N. Portland
Harbor-Russell St. Sec.
Pacific Highway
Multnomah County

We are attaching a bill from Abco Wrecking Company for the demolition contract authorized by the Highway Commission at the December 19, 1966 meeting. Also attached is the Wage Certification. The contract has now been completed. The cost prefix for this project is 26-2029-406.

W. H. HASKIN
Property Manager

Wp

Attach.

cc: H. V. Jackson
cc: Floyd Quary

NOTED
FLOYD QUARY

RECEIVED
MAR 6 - 1967
FOR FILING

COMMISSIONERS
GLENN L. JACKSON, CHAIRMAN
KENNETH N. FRIDLEY, MEMBER
WASCO
DAVID B. SIMPSON, MEMBER

I-405-8(17)303
7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

March 1, 1967

Union Pacific Railroad Company
2525 North Lombard Avenue
Portland, Oregon 97227

ATTENTION: Mr. W.G. Johnson

Re: Contract Schedule
Fremont Bridge Section-Stadium Freeway
Multnomah County
Project No. I-405-8(4)303
YOUR FILE: D-9010-32-17

Gentlemen:

This is in reply to your letter of February 23, 1967 requesting advice as to the proposed construction dates of the Fremont Bridge and the East Fremont Interchange.

At this time, it appears that we will be letting a contract for the construction of the four major piers of the Fremont Bridge in the later part of this year. We do not anticipate construction on the East Fremont Interchange to begin prior to July of 1968. Therefore, it appears that your existing lease to the National Car Loading Corporation could be extended until June 14, 1968, as you desire.

In the meantime, we plan to continue negotiations with you for the use of this property as shown on the plans of the interchange which were handed to your representatives on October 27, 1966.

Very truly yours,

F.D. Morgan
Construction Engineer

By ORIGINAL SIGNED BY
T. W. LITCHFIELD
T.W. Litchfield
Utilities Liaison Engineer

TWL:sg
cc: ~~E.B. Klaboe~~
Tom Edwards
I.D. Merchant
L.H. Young
D.H. Moehring
A.E. Johnson
Jack Hesla

RECEIVED
DEC 19 1966
FOR FILING

I-405-8(17)303

W. G. JOHNSON
SUPERINTENDENT
OREGON DIVISION
7276

UNION PACIFIC RAILROAD COMPANY

TRANSPORTATION DIVISION
DEPARTMENT OF OPERATION

5525 NO. LARRABEE AVE.
PORTLAND, OREGON 97227

DECEMBER 2, 1966

File Ref. D 9010 - 32 - 17

Routing

Morgan
Bodler
Bond
Barbee
Walker
Glenn
Swan

RECEIVED
DEC 5 1966
CONSTRUCTION
DIVISION

Peat
Mereleck
Treut
Scott
Wills
Litchfield
Olson

Mr. F. D. Morgan,
Construction Engineer
Oregon State Highway Department
Salem, Oregon 97310

Atten: Mr. T. W. Litchfield,
Utilities Liaison Engineer

Dear Sir:

Reference is made to Oregon State Highway Department's latest plans for constructing the Fremont Bridge and E. Fremont Interchange over and across Union Pacific Railroad Company's Albina Yard as illustrated on prints handed to Railroad representatives on October 27, 1966.

These prints show a newly proposed ramp structure over the Railroad's terminal property next to our Freighthouse and I must advise Union Pacific is very much opposed to such an arrangement. The additional structure would occupy more of the Railroad's property than originally contemplated by the State's transverse overhead highway crossing and would further restrict the Railroad's operations and potential for expansion in the area.

There are increasing demands for use of our terminal property and as a consequence Union Pacific is not in favor of granting easements to the State other than those previously indicated on print supplied with my letter of October 5, 1964, addressed to Mr. Ivan Merchant.

Nevertheless, in line with recent conversation, if you will furnish further data justifying the State's proposed construction, this will be considered.

Yours very truly,

W. G. Johnson

COPIES TO:
R L PORTER
F B KLABOE
I D MERCHANT
F D MORGAN
D H MOSHER
A E JOHNSON
O E STURMER
JACK HEELA

THIS INFORMATION SENT TO UPRR WITH MY LETTER DATED 12-2-66
T

RECEIVED
DEC 16 1966
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
F. B. KLABOE

RECEIVED
OCT 11 1966
FOR FILING

10-10-66

J-405-8(17) 3<3
7276

CLASS OF SERVICE
This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION TELEGRAM

W. P. MARSHALL, CHAIRMAN OF THE BOARD
R. W. McFALL, PRESIDENT

SYMBOLS
DL = Day Letter
NL = Night Letter
LT = International Letter Telegram

The filing time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination

OCT 10 AM 8 5

PRA014 LB055

L CDU158 DL PD=FAX CD NEW YORK NY 10 1016A EDT=
TOM EDWARDS, ASST STATE HIGHWAY ENGINEER=
STATE HIGHWAY DEPT SALEM ORG=

RE FREMONT STOP FOUNDATION INVESTIGATION BY DAMES & MOORE PLANNED TO COMMENCE OCTOBER TENTH AND TO COMPLETE FIELD INVESTIGATION BY NOVEMBER EIGHTEENTH STOP NINE BORINGS WILL BE TAKEN=

REDEFINE. 1

NOTED
TOM EDWARDS

copy to Merchant
10-10-66

WU1201 (R2-65) THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

RECEIVED
SEP 12 1966
FOR FILING

I-405-8(17)303

7276 9-9-66 TCR

9-9-66

FREMONT BRIDGE

Sta. 346+30 to 367+70=2140

The following estimated "Payroll Cost" for the design of the Fremont Bridge is based on the following factors:

1. Man hours required for complete design:

   Based on a curve, copy attached, worked up from actual design time for approx. 162 bridges designed by the department in the years of 1962 thru 1964.

2. Breakdown of total design time into component parts:

1.	Preliminary Design & Estimates	14%
2.	Final Design & Drawings	72%
3.	Specifications	3%
4.	Estimate of Contract Cost	1%
5.	Checking Shop Drawings	10%

The above percentages are arbitrary and are based on approximate time required in studies of past designs.

Att.

NOTED

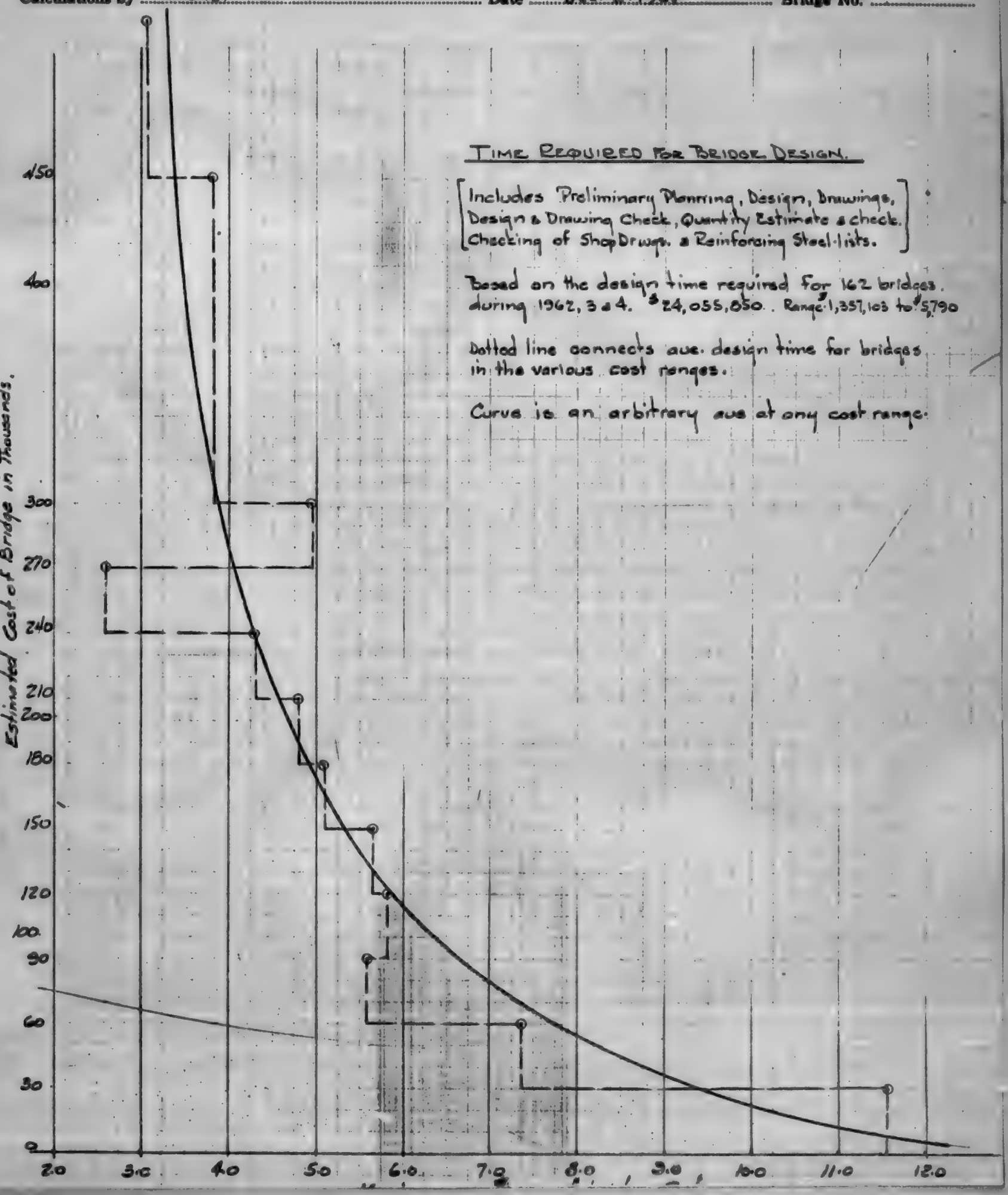
Form B-130—8262—4-64 SP-8130-124

Oregon State Highway Department
BRIDGE DESIGN SECTION

Sheet .....

Bridge ..... County .....

Calculations by T.C.R. Date Dec. 7. 1965. Bridge No. .....



TIME REQUIRED FOR BRIDGE DESIGN.

[Includes Preliminary Planning, Design, Drawings, Design & Drawing Check, Quantity Estimate & check. Checking of Shop Drwgs. & Reinforcing Steel lists.]

Based on the design time required for 162 bridges during 1962, 3 & 4. $24,055,850. Range 1,357,103 to 5,790

Dotted line connects ave. design time for bridges in the various cost ranges.

Curve is an arbitrary ave at any cost range.

9-6-66
T.C.R

FREMONT P.RIDGE STA 346+30 To 367+70 = 2140 Lin.F.

Est. Cost of 2555' R.B.Q.sD. = $17,220,000
" " " 415' @ $3000/LF = 1,245,000

Estimated Cost of 2140' of Br. = $15,975,000 Use $16,000,000
(Original Est. 7-21-66 based on $18,220,000 = 2945' bridge Length)

Payroll Cost

~~1. Preliminary Estimates & design etc. 7300 × $30 = 38,700 Complete~~

2. Design & Working drwgs	37,400 × $5.30	198,000
3. Const. Specifications	1,640 × $5.30	8700
4, Const. Cost Est.	520 × $5.30	2.750
5. Checking Shop Drwgs.	5200 × $5.30	27.500

Total = 236.950 Use $237,000

Foundation Report. Complete.

Extra Ordinary Expense

1 Salary of Consultants	48,000
2 Expenses	10,000
3 Travel	2,000
	60,000

$60,000

Payroll Burden & Fringe Benefits Cost.

1. 20% of Payroll cost. 237.000 × .2 Total $47,400

General Overhead.

1. 80% of Payroll cost. 237,000 × .8 Total $189,600

Profit.

1. 15% of all Costs. 237 / 60 / 237 = 534,000 × .15 Total $80,100

$614.100 **.

9-6-66
T.C.R.

FREEMONT BRIDGE STA 346+30 to 367+70 = 2140 Lin. ft

Comparison of Estimates.	P.B.Q.&D.	State.
№1 DIRECT PAYROLL COST.		
1 Substructure.	18,000	
2 Superstructure	89.000	198,000
3 Specifications.	9.000	8.700
4 Cost Estimate	—	2,800
5 Shop drawings	32,000	27.500
6 Signs	2,000	
7 Deck Surfacing	6,000	
8 Wind tunnel	3,000	
9 Borings	2,000	
10 Consultant	1 000	
11 Computer	1.000	
12 Escalation	10,000	
13. Contingency.	17.000	
	#190,000	#237,000
№2 OUT OF POCKET EXPENSES. (EXTRA OBIDINARY).		
1. Deck Surfacing.	6,000	
2 Wind Tunnel.	30,000	
3 Consultant	6,000	
4 Computer	17,000	
5 Consultant (Salem).	10,000	48,000
6. Borings.	26,000	
7. Consultant per diem		10,000
8. " Travel exp.		2.000
9. Contingency.	12,000	
	107,000	60,000
№3 OVERHEAD		
1 Pay Roll Burden & Fringe Benefits		47.400
2 General Overhead.	190,000	189.600
	190,000	237.000
№4 PROFIT.		
1. Profit.	100,000	80,100

9-6-66
T.C.R

FREMONT BRIDGE STA 346+30 to STA 367+70 = 2140 Lin Ft.

Comparison of Estimates

Summary.

1	Direct Payroll Cost	$190 000	$237.000	
2	Out of. Pocket Expense	107 000	60.000	
3.	Overhead.	190 000	237 000	
4	Profit.	100 000	80 100	
	Total.	$537,000	$614.100	
	Difference.		+$27,100	4.4%

Direct Payroll Cost

Substructure	18,000	
Superstructure	89,000	
Specifications	9,000	
Shop Drwgs	32,000	
Signs	2,000	
Deck Surfacing	6,000	
Wind Tunnel	3,000	
Borings	2,000	
Consultation (Salem)	1,000	
Computer	1,000	
		163,000
Escalation 6%		10,000
Contingency 10%		17,000
	Total D.P.C	190,000 ←

Out-of-Pocket Expenses

Deck Surfacing	6,000	
Wind Tunnel	30,000	
Consultant	6,000	
Computer	17,000	
Consultation (Salem)	10,000	
Borings	26,000	
		95,000
Contingency	12,000	
	Total O.P.E	107,000

Payroll	$ 190,000		
100%	$ 190,000	$	
		$ 380,000	
O. P. E.		107,000	
		$ 487,000	
Profit		100,000	
		$ 587,000 ←	

RECEIVED
SEP 27 1966

SEP 8 1966

I-405-8(17)303
7276

Oregon State Highway Department
Salem, Oregon 97310

4473

Att: Mr. R.L. Porter
Deputy State Highway Engineer

Re: Fremont Bridge
Agreement dated 2/8/66

Gentlemen:

We would appreciate your assistance in providing our independent accountants, Price Waterhouse & Co., with an independent confirmation of your receivable balance with us.

Will you, therefore, please compare the enclosed statement with your records and complete the section below. *To assure an independent confirmation of your account, please direct your reply and any questions you may have to Price Waterhouse & Co.*

This letter is not intended as a request for payment of your account. Please do not send your remittances to Price Waterhouse & Co.

Your prompt response to this request will be deeply appreciated.

Yours very truly,
PARSONS, BRINCKERHOFF QUADE & DOUGLAS

By _____

PLEASE MAIL THIS COMPLETED FORM DIRECTLY TO PRICE WATERHOUSE & CO.
(Return envelope enclosed)

CONFIRMATION OF ACCOUNTS RECEIVABLE

PRICE WATERHOUSE & CO.
60 BROAD STREET
NEW YORK, NEW YORK 10004

Reference S.L.W
Number 5

Gentlemen:

The balance of $ 16,314.16 at JUN 30 1966 shown by the statement as owing by the undersigned to the above company agrees with our records except as noted below: (Please list any charges you do not accept, credits you have not been allowed, or other differences, showing dates and amounts).

Statement

338 7/28/66 16,314.16

RECEIVED
SEP 13 1966
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
J.H. EDWARDS

Yours very truly,

Oregon State Hwy. Dept.
(INDIVIDUAL OR COMPANY NAME)

By C.H. Maison Controller
(NAME) (TITLE)

Date 9/12, 1966

RECEIVED
AUG 15 1966
FOR FILING

I-405-8(17)303
7276

August 12, 1966

Mr. A. M. Parsons
Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon

Dear Sir:

Re: Fremont Bridge, Stadium Freeway,
City of Portland, Multnomah County

A check of the anticipated curve on the proposed Fremont Bridge using the new Capacity Manual leads us to believe that either we need five lanes each way or that we are not using the new Manual properly.

Since the latter may well be the case, I am enclosing copies of pertinent data on traffic, curve length and grades, and request that this be referred to the experts for a first check before it is too late.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

F. B. Klaboe
Assistant State Highway Engineer

Enclosure

cc: Forrest Cooper
R. L. Porter
F. D. Morgan
F. E. Crandall
A. E. Johnson

ADO:jr erb

Form E-106

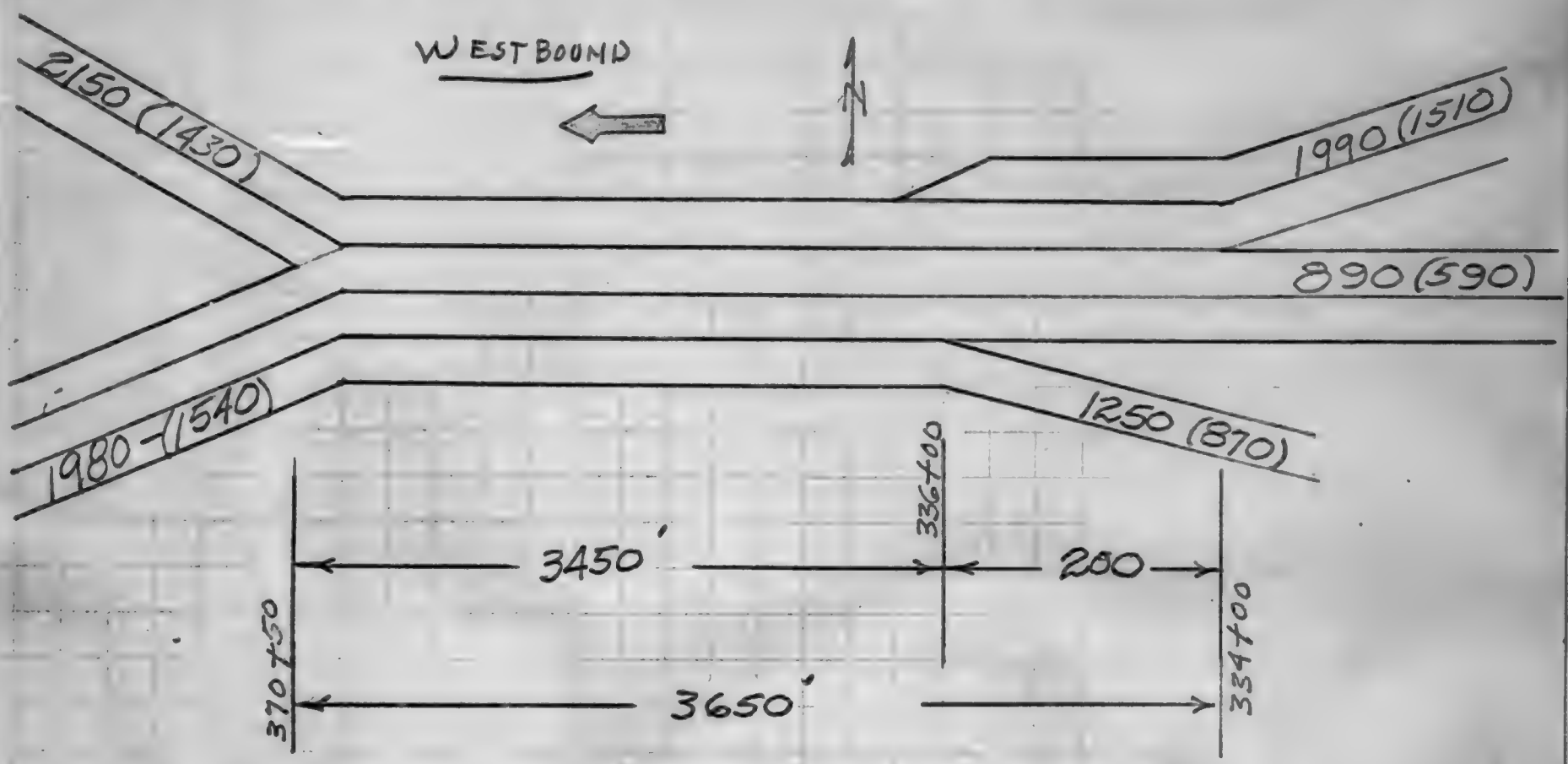
Job No. .....

Sheet 1 of 2 Sheets

OREGON STATE HIGHWAY DEPARTMENT

Calculations for Weave on Fremont Bridge (Upper deck)

Made by Teel 8-9, 1966. Checked by ....., 19..... Backchecked by ....., 19.....

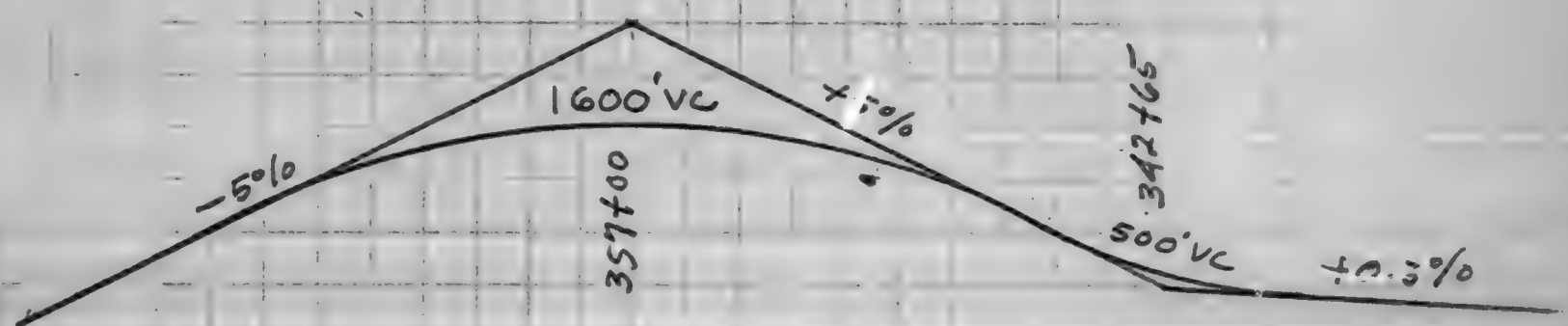


Schematic chart showing number of lanes and weaving distances. DHV shown thus

A.M. 000

P.M. (000)

These are 1986 peak hours.



Profile

Form E-106

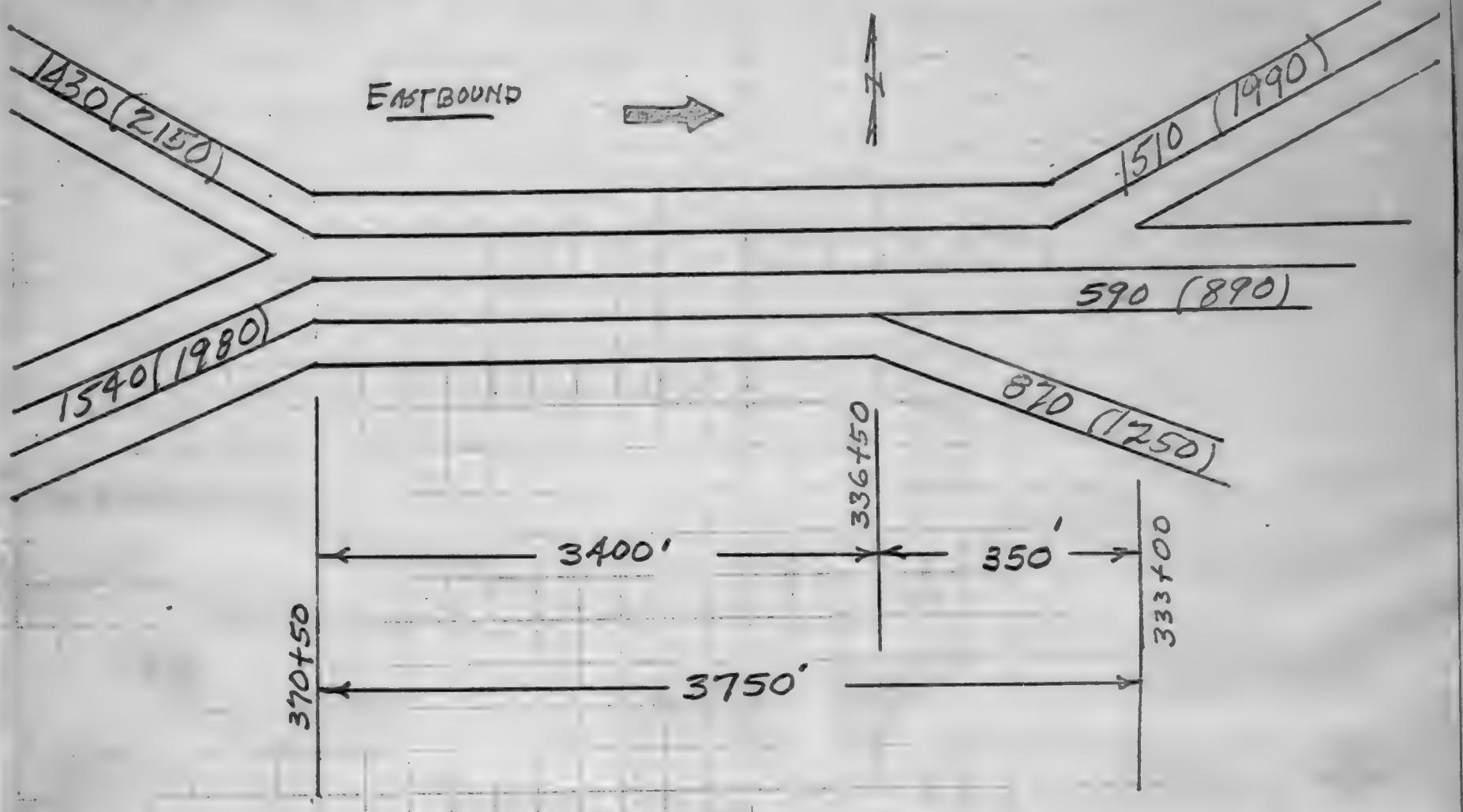
Job No. .....

Sheet 2 of 2 Sheets

OREGON STATE HIGHWAY DEPARTMENT

Calculations for Weave on Fremont Bridge (Lower deck)

Made by Teel 8-9, 1966. Checked by ....., 19..... Backchecked by ....., 19.....

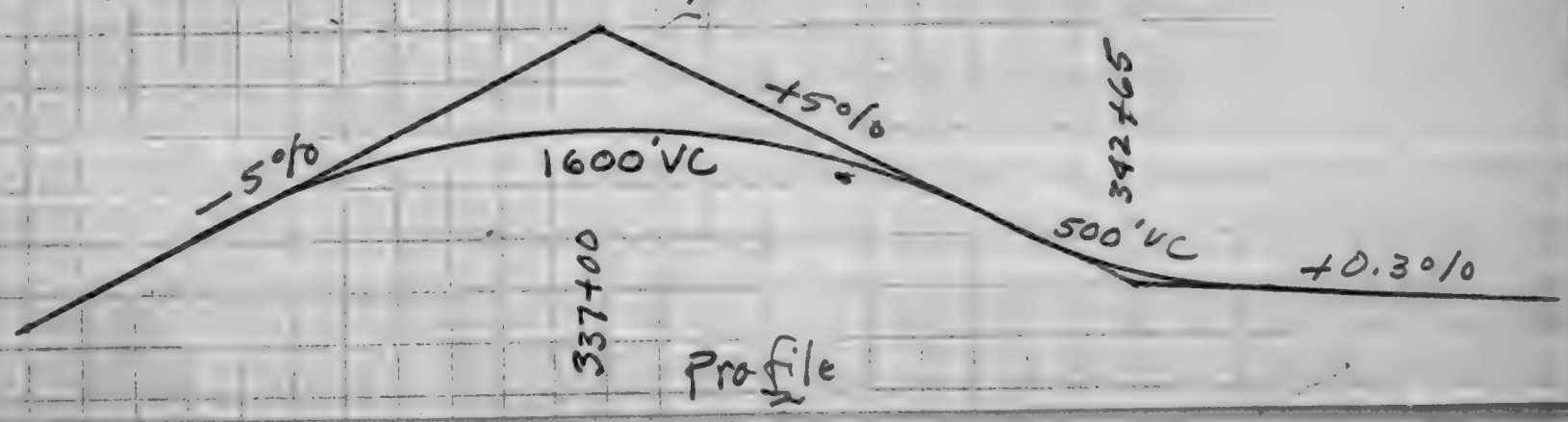


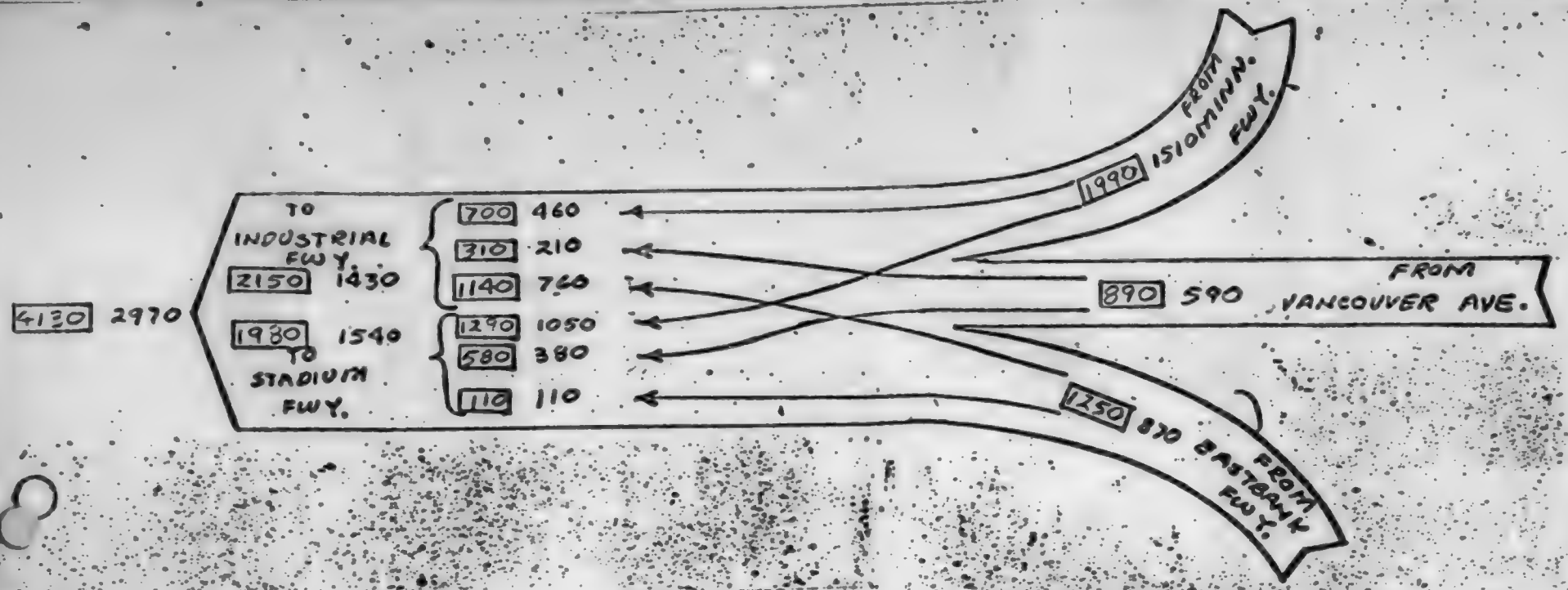
Schematic chart showing number of lanes and weaving distances. DHV shown thus

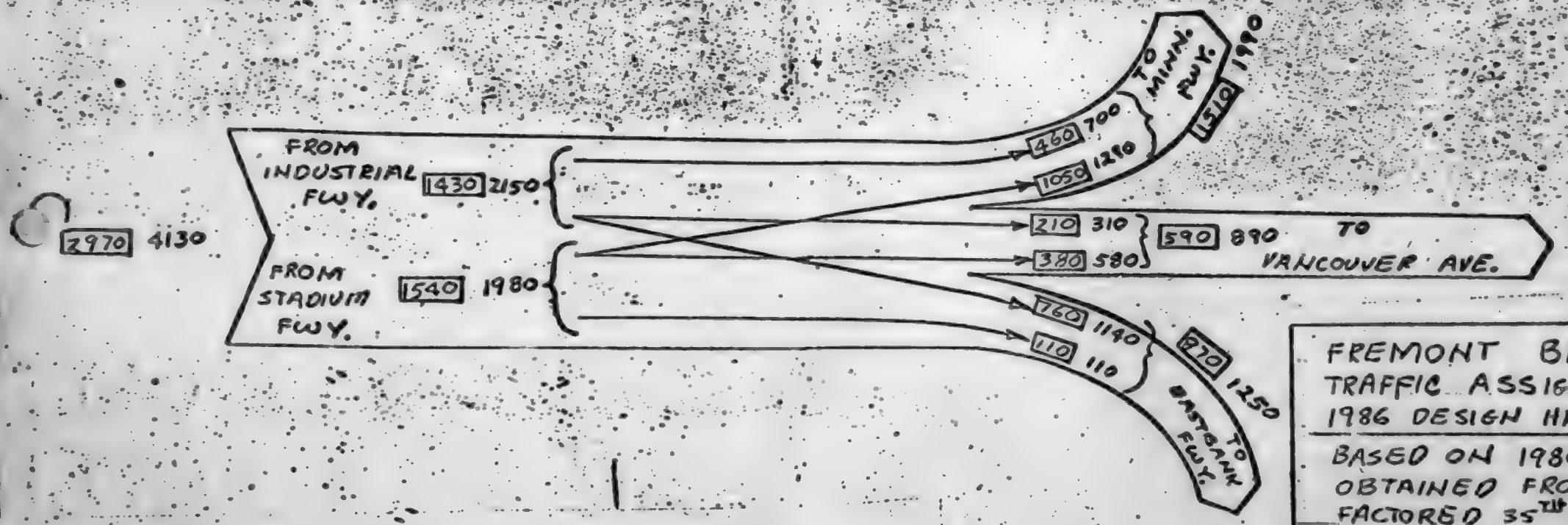
AM 000

PM (000)

These are 1986 peak hours.







FREMONT BRIDGE
TRAFFIC ASSIGNMENT
1986 DESIGN HR. VOL.

BASED ON 1986 ADT OBTAINED FROM THE FACTORED 35TH FTS LOADIN SYSTEM INCLUDES A MT. HOOD FWY AND I-205 (96TH)

AM PM 5-17-66

RECEIVED
AUG 1 1966
COMMISSIONERS

GLENN L. JACKSON, CHAIRMAN
MEDFORD
[illegible] FREDLEY, MEMBER
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND

I-1105-8(17)303
7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

July 29, 1966

Mr. Werner S. Storch, President
Storch & C.B.A. Engineering Company
8203 S. E. 13th Avenue
Portland, Oregon 97202

Dear Mr. Storch:

This is in reference to your July 18 letter advising this Department of your availability to perform consultant engineering services in connection with highway bridges.

There is no form or special application required when the need for consultant engineering services develops, the Department must follow a procedure that is acceptable to the Federal Bureau of Public Roads (nearly all consultant services will be in connection with Federal-aid highway work.) The Department is required to give consideration to several engineers or engineering firms and then select one who, in its opinion, can render the optimum service for the State.

I am sure that you understand this is a difficult and, at times, a frustrating experience, as we have on file offers of service from 15 or 20 competent engineering firms.

We will place your organization's application on file and it will be given consideration along with those of other firms when needs for consultant services arise.

Very truly yours,

Original signed
Forrest Cooper

Forrest Cooper
State Highway Engineer

cc R. L. Porter
Tom Edwards
F. B. Klaboe
Victor D. Wolfe

NOTED
TOM EDWARDS

RECEIVED
JUN 27 1966
FOR FILING

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
June 24, 1966

Const
Proj
Salem Portland
Fremont Br.

SUBJECT: MEMO TO THE FILE

On this date Randall Jones discussed in my office matters concerning the Storch Engineering proposal to design the Fremont Bridge in Portland.

The principal theme of Mr. Jones' dissertation consisted of the reciting of a long list of rumors and gossip, all of which he stated they subsequently found out were not factual. I told Mr. Jones that I refused to deal in rumors and gossip or to even discuss them.

He asked that we consider Storch Engineering Company's proposal to design the Fremont Bridge.

Forrest Cooper
State Highway Engineer

FC:ajw

cc R. L. Porter
Victor D. Wolfe

RECEIVED
OCT 25 1965
FOR FILING
Govt
Projects
Mtnce - Portland

Salem, Oregon
October 21, 1965

Fremont Bridge

Mr. Forrest Cooper
State Highway Engineer

OFFICE

You asked that I compare the PBQ&D and C.B.A. reports on the proposed Fremont Bridge; that the cost factors be analyzed and any differences in design be described.

There is one basic difference in the design prepared by Quade and that prepared by C.B.A. The C.B.A. design contemplated that the structure will be fixed at one main pier only and will be allowed to expand and contract on all other supports. This means that provision must be made for an expansion movement of some three to four feet. Quade analyzed this identical type of structure and also the same configuration fixed at both main piers. This will reduce expansion and contraction at the ends of the structure to approximately six or eight inches, with the remainder being taken up by rise and fall of the arch rib. Quade contends that this provides a stiffer, more rigid structure, less material, and is superior type of bridge for the location. C.B.A. state that their theory will require less material and is superior because erection problems are simpler. We have a difference of opinion on this point expressed by two experts but from my meager knowledge of fixed arches, I believe Quade's idea is more economical. The fixed construction probably is more difficult to erect.

There is another difference between the two estimates in that Quade's structure is 2,635 feet in length, while C.B.A.'s is 2,555 feet. We asked Quade, in preparing three supplemental estimates, to lengthen the structure enough so that a relocation of the intersection of N.W. 14th and Thurman Streets would not be necessary. C.B.A.'s estimate was based on the over-all length that was contained in Quade's original report.

There are two reasons why C.B.A.'s estimate is lower than Quade's:

No. 1. The C.B.A. design contemplates 33,800,000 pounds of steel. Quade's design requires 37,550,000 pounds. Some

of this can be attributed to the fact that C.B.A. uses a lightweight concrete lower deck, whereas Quade's design contemplates a conventional concrete deck. I cannot recommend that a lightweight concrete deck be incorporated in this structure. To my knowledge, it has never been entirely successful in highway bridges, particularly, where the traffic intensity and loadings are large.

No. 2. Quade used considerably higher unit prices than C.B.A. As he explained at the recent meeting in Portland, his prices were based on estimates prepared by two major steel companies, as well as his own. These estimates were not simply prices that had been used in other construction throughout the nation but were prices the steel companies felt would be realistic for this unusual type of design. As far as I know, C.B.A. used prices that were comparable for various types of construction recently contracted. One of their references was the Poplar Street Bridge in St. Louis which, true enough, is an orthotropic design but a much simpler type of construction than is contemplated at Fremont. They also cited prices for a recent California bridge which is of cantilever construction and bears no resemblance to the design under consideration. There is another difference in estimated cost on the substructure in that Quade's is approximately $500,000 more than C.B.A.'s. Quade's substructure might be slightly more expensive because the fixed arch will develop a horizontal component to the pier reaction, whereas in the C.B.A. design the horizontal component of the reactions are zero. I believe, however, that this alone would not account for all the difference and must assume that Quade's design is more conservative.

By using the quantities in the C.B.A. estimate and applying Quade's unit prices and expanding the totals by seven percent to bring them to a 1965 price level, and by further extending the C.B.A. estimate to a 2,635-foot structure, results in a total cost of $18,027,000. This compares with Quade's 1965 estimate of $19,300,000. This difference is not surprising in that Quade spent about six months in preparing his estimate whereas C.B.A.'s was put together in a comparatively short time (I understand, two or three weeks). It is recognized that C.B.A. had a precedent to follow in the Port Mann Bridge but the Port Mann Bridge is only a single deck structure and according to Quade, the addition of the second deck adds considerable complication to the design problems.

From what I can gather, I believe that Quade's estimates of the various types of designs, particularly, the three supplemental ones, are truly comparable. If he is too conservative and has estimated too high on the stiffened tied arch, he likewise has estimated too high on the suspension bridge and the cantilever bridge. It is not fair to compare the report of one engineering firm against that of another unless we know they were both prepared under similar conditions and identical criteria. I am convinced that the stiffened tied arch, which admittedly has superior esthetic qualities, will cost approximately $2.3 million more than a conventional cantilever structure.

R. L. Porter
Deputy State Highway Engineer

RLP:ms

cc Mr. Tom Edwards
Mr. Victor D. Wolfe

RECEIVED
NOV 15 1965

FOR FILING

Court
Legislative
Victor Portland

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
November 12, 1965

To: MEMO TO FILE

SUBJECT:

On this date, Mr. Ronald McReary called at this office and stated that he was representing the Professional Engineers of Oregon, the Consulting Engineers of Oregon, and the ASCE; and was seeking information as to possible unethical practices by Werner S. Storch & Associates of Portland. Mr. McReary asked what we knew about the firm and numerous questions as to whether or not it had been retained by this Department in any professional capacity.

Mr. McReary was given the background of the Fremont Bridge situation. He was told that we had no understanding or working arrangement with the Storch firm in any manner whatsoever and that estimates or proposals for the Fremont Bridges design by that firm had been given to us by officers or employees of the City of Portland or by an individual member of the Highway Commission itself.

I explained to Mr. McReary the details of our arrangement with Parsons, Brinckerhoff, Quade & Douglas and told him that a firm has not yet been selected to prepare contract plans and specifications for the Fremont structure.

During the discussion, the matter came up as to whether or not Storch & Associates had employed an agent to solicit business for their concern and I answered that we had communications from an attorney with this subject in mind. He asked for the attorney's name and after clearing the matter with Mr. Rohde, this was furnished to Mr. McReary.

In passing, Mr. McReary stated that there had been two other complaints about this same firm which did not involve highway matters.

R. L. Porter
Deputy State Highway Engineer

RLP:ms
cc Forrest Cooper
Tom Edwards
Victor D. Wolfe

RECEIVED
SEP 27 1965
FOR FILING

Carl
Tony
Inland - Portland
Fremont Br.

RANDALL S. JONES
ATTORNEY AT LAW
1212 FAILING BUILDING
PORTLAND, OREGON 97204
CAPITOL 2-9966

September 22, 1965

NOTED
R. L PORTER

Mr. Forrest Cooper
State Highway Engineer
State of Oregon
State Highway Department
Salem, Oregon 97310

Re: Fremont Bridge

Porter

Dear Mr. Cooper:

Since writing to you on September 16th I have received copies of a Supplement to the Storch and C.B.A. Engineering Co. Proposal for the Fremont Bridge; and I enclose two copies thereof for your information.

This supplement contains a revised detailed estimate of $15,887,000 as the cost of constructing the Storch and C.B.A. design of the Fremont Bridge.

Should you have any questions, Mr. Storch or Mr. Hilton would be pleased to hear from you.

Yours very truly,

Randall S. Jones

Randall S. Jones

RSJ:m

RECEIVED
SEP 23 1965
OFFICE OF
STATE HIGHWAY ENGINEER

September 14, 1965

Mr. Randall B. Jones
Attorney at Law
1211 Failing Building
Portland, Oregon 97204

Dear Mr. Jones:

The Highway Commission has handed me your letter of August 31 in which you refer to the design of the Fremont Bridge.

The Commission has asked me to inform you that as of this date no decision has been reached with respect to the type of bridge nor has any determination been made as to who will make the design.

Very truly yours,

Fourest Cooper
State Highway Engineer

FCifm

cc Commissioners

R. L. Porter
Tom Edwards
Victor D. Wolfe

Copies

RANDALL S. JONES
ATTORNEY AT LAW
1212 FAILING BUILDING
PORTLAND, OREGON 97204
CAPITOL 2-9966

August 31, 1965

RECEIVED
SEP 9 1965
OFFICE OF
STATE HIGHWAY ENGINEER

Mr. David Simpson
Highway Commissioner
711 S. W. Alder Street
Portland, Oregon

Re: Fremont Bridge

Dear Mr. Commissioner:

This supplements the letter to you of April 23, 1965, signed by Randall S. Jones concerning the above bridge.

As you will recall last fall several designs for the Fremont Bridge were submitted to the City of Portland. Seven designs were prepared by the New York firm of Parsons, Brinckerhoff, Quade and Douglas, one by a Salem engineer, and one by Werner S. Storch & Associates, Inc. and C.B.A. Engineering Ltd.

The City was informed by a member of the Highway Engineering Department that if one of a certain three of the nine designs were selected by the City the Highway Department would build it. The Storch-C.B.A. design was one of the three.

The Storch & C.B.A. design is similar to the Port Mann Bridge in Canada, which bridge was designed by C.B.A., and the construction thereof was supervised by that Company. This design was unanimously approved by the City Council of Portland on December 2, 1964.

Since then the Engineering Department of the Highway Commission retained the New York Firm to prepare three additional designs. The question arose as to how it came about that these new designs were ordered after the City had selected the Storch-C.B.A. design upon being told that the Highway Department would build the bridge selected by the City. To the best of our knowledge and information these additional designs were ordered on the initiative of the Engineering Department of the Highway Commission without any request or suggestion by the City that the same be obtained.

The three new designs were submitted to the City Council

with the request that it approve one of them. Except for the provision for expansion and contraction, one of the three new designs (Design S 1) looks like the Storch-C.B.A. design.

Since the letter of April 23, Storch and C.B.A. have organized an Oregon corporation in which each of them are shareholders. The name of this corporation is Storch & C.B.A. Engineering Co. Its office is located at 8203 S. E. 13th Avenue, Portland, Oregon.

Mr. Norman Hilton and Mr. Werner Storch are professional engineers and are on the board of directors of Storch & C.B.A. Engineering Co. They examined and made a preliminary review of the New York Firm's Supplementary Report on three additional designs for the Fremont Bridge, a copy of which review is herewith enclosed.

From this review and from our conversations with Messrs. Hilton and Storch, the following salient facts appear:

1. Although the orthotropic bridge (Design S 1) designed by the New York Firm looks like the Storch-C.B.A. design, the two designs are basically different.

2. The Storch-C.B.A. design permits free horizontal expansion and contraction of the bridge.

3. Design S 1 requires more massive foundations and more structural steel than the Storch-C.B.A. design.

4. The New York Firm estimates the 1965 cost of Design S 1 at $19,300,000. The 1964 estimate of the Storch-C.B.A. design was $14,952,000. This figure was based on experience gained in constructing the Port Mann Bridge. The New York Firm's supplementary report shows an increase of 7-1/2% in the cost of the steel super structure over the 1964 cost thereof (Page 30). This increase applied to the 1964 estimated cost of the steel super structure of the Storch-C.B.A. design would increase the cost of the bridge to $15,800,600, which is cheaper than the estimated cost of any of the bridges designed by the New York firm without piers in the river (Page 31).

We also respectfully call attention to the following facts:

a. The Storch-C.B.A. design is not experimental. It is essentially the same as the Port Mann Bridge which is in operation and giving very good service.

b. If Storch-C.B.A. is retained to design the Fremont Bridge, all the engineering work will be done in Oregon. The work would be performed under the supervision and direction of the experienced and qualified staff of bridge engineers who designed and supervised the construction of the Port Mann Bridge. These engineers would reside in Oregon during the time the work would be in progress, and all other members of the engineering staff would be qualified local personnel.

If you would like to discuss the proposed designs with Mr. Hilton or Mr. Storch, Mr. Hilton could see you at your office at any time after Tuesday, September 7, 1965, and Mr. Storch could do so at any time.

We are supplying you with three copies of this letter and of the enclosed preliminary review, and we will appreciate it very much if you will deliver a copy of each to Mr. Jackson and to Mr. Fridley.

We understand that the New York Firm was retained only for the purpose of making the preliminary designs, and that no engineers have been retained to do the engineering work on the Fremont Bridge; consequently we request that consideration be given to retaining Storch & C.B.A. to perform that engineering work.

Yours very truly,

Raymond E. Vester
Director, Storch & C.B.A.
Engineering Co.

Randall S. Jones
Attorney for Storch &
C.B.A. Engineering Co.

Enclosures

RECEIVED
SEP 9 1965
OREGON
STATE HIGHWAY COMMISSION

COMPARISON BETWEEN STORCH & C.B.A. ENGINEERING CO. PROPOSAL FOR A STIFFENED TIED ARCH BRIDGE AND PROPOSAL S 1 OF THE SUPPLEMENT TO ALTERNATE DESIGNS FOR THE FREMONT BRIDGE

Having given a preliminary review to the proposal of the New York consultants for a stiffened tied arch bridge with orthotropic upper deck, it has become evident that although in appearance their proposal S 1 looks like the Storch & C.B.A. Engineering Co. propesal, the structural design is substantially different.

The Storch & C.B.A. proposal is based on the structural design concept of the existing Port Mann Bridge, while proposal S 1 is based on an unprecedented design. (Page 15) In the Storch & C.B.A. design, the main arch is held firmly in place at one end but is free to expand and contract at the other end where the steelwork rests on a series of rollers. This method of controlling expansion is very common and used on many bridges throughout the world including some of those in Portland, Oregon. The structural design of proposal S 1 has both steel supports firmly fixed (See Page 6) and expansion and contraction of the long steel bridge is provided for by a rise and fall in the arch and deck.

This difference has resulted in a considerably higher cost estimate for proposal S 1. Due to the design concept of having both ends of the bridge fixed, erection of the proposal S 1 will be more difficult. The Storch & C.B.A. proposal, based on tried methods of erection of the Port Mann Bridge, will be considerably easier with resulting savings in cost.

It also appears that there are about 3,750,000 pounds more structural steel required in design S 1. This proposal has also heavier foundations due to arch thrust from the fixed supports.

Storch & C.B.A. have carefully considered their estimate and find no reason to change the same with the exception that an allowance of 7-1/2% should be made in the steel superstructure on account of increased costs between 1964 and 1965 as outlined in the New York report (Page 30). This will bring the Storch & C.B.A. estimate up to $15,800,600 as compared with proposal S 1 of $19,300,000.

Portland, Oregon, August 28, 1965

W. Storch, P.E.

N. Hilton, P.E.

RECEIVED
DEC 2 1964

WERNER S. STORCH & ASSOCIATES

CONSULTING ENGINEERS

December 1, 1964

560 FIRST STREET
LAKE OSWEGO, OREGON
NEPTUNE 6-5791

Genat
Projects
Muni. Portland
Fremont

checked with Marie S. Manager original present to City of Portland 12-2-64

Mr. P. M. Stephenson
Assistant State Highway Engineer
State Highway Commission
State Highway Building
Salem, Oregon

Dear Mr. Stephenson:

I wish to thank you and your staff for giving us the privilege of presenting a proposal for the Fremont Bridge.

Our proposal has been well received in the City of Portland and I hope you will be able to give it further serious consideration.

In the light of your recent announcement that the design of the new bridge will be carried out by a consulting engineer's firm, we would greatly appreciate you considering our services for this important project.

Should we be favored with the design contract, an excellent team of bridge designers will be available here in Portland to do the work. An organization is in the process of being formed which will be technically competent to do all phases of the design and supervision of construction of the type of bridge structure decided upon.

The organization will include the top members of the bridge division of C.B.A. Engineering Ltd., designers of the Port Mann Bridge, including Norman Hilton and Knut Mannicke both of whom you have met. Acting in an advisory capacity will be the eminent German consulting engineer, Professor Dr. Kurt Kloppel, designer of many outstanding bridges in Europe.

Should you wish any further details I will be pleased to meet with you.

Thanking you and hoping we will have the pleasure of serving and working with your Department.

Very truly yours

WERNER S. STORCH & ASSOCIATES

Werner S. Storch

WSS:kfc

NOTED
P. M. STEPHENSON

RECEIVED
DEC 2 1964
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
NOV. 16 1965
FOR FILING

OFFICE OF

AUDITOR OF THE CITY OF PORTLAND

PORTLAND, OREGON 97204

Conf. Rm. 303
Prof. CITY HALL
Mun. Portland
Fremont Br.

11-4-65

Ray Smith
Auditor
City of Portland

NOTED
FORREST COOPER

COPY CERTIFICATE

STATE OF OREGON,
County of Multnomah,
CITY OF PORTLAND, } ss

Stock 9 asses. See Page 2 of Rpt

I; RAY SMITH, Auditor of the City of Portland, do hereby certify that I have compared the following copy of **Resolution No. 29695, adopted by the Council November 4, 1965, being,**

"Resolution concerning design of the proposed Fremont Bridge in the City of Portland"

with the original thereof, and that the same is a full, true and correct copy of such original

RESOLUTION NO. 29695

and of the whole thereof as the same appears on file and of record in my office, and in my care and custody.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of the City of Portland affixed this **4th** day of **November, 1965.**

Ray Smith
Auditor of the City of Portland

By Robert L. McCoy Deputy

RESOLUTION NO. 29695

WHEREAS the Highway Commission of the State of Oregon expects to construct a bridge over the Willamette River within the City of Portland to be known as the "Fremont Bridge," between the present St. Johns Bridge and Broadway Bridge, and

WHEREAS the design of a bridge within the city is of paramount importance to the citizens of this city and to the city government since such a bridge lasts for the indefinite future and should serve not only to carry traffic between the east and west sides of the Willamette River, but also should serve as an artistic embellishment to the city and its environs in order to promote the best objectives of proper planning, proper design and proper beautification of an area renowned for its natural scenic beauty, and

WHEREAS any design of such a bridge should not affront the eyes of the beholder as a discordant demonstration of man's disregard of the charm of his natural surroundings, but rather should combine beauty with utility, and

WHEREAS appropriate and artistic design would further the economic welfare of the area in promoting rather than diminishing its tourist attractions, and

WHEREAS small additional expense in construction of a bridge design of artistic merit is justified as a promotion of the national objective of highway beautification in addition to the other factors mentioned; now, therefore,

BE IT RESOLVED by the Council of the City of Portland, Oregon, that on behalf of the people of Portland, the City Council hereby states its intention to request immediate approval by the State Highway Commission and by the Bureau of Public Roads of the Orthotropic Design without piers within the Willamette River with preference being given to a Tied Arch design with lighting design as previously constructed on the bridge at Port Mann, British Columbia, Canada.

Adopted by the Council NOV 4 - 1965

Ray Smith

Auditor of the City of Portland

Commissioner Bowes
November 4, 1965
MCR/fg

Statement handed to Mr. Cooper by
Mr. Bowes at Washington, D. C.

meeting with Bureau on 11-5-65.

At the request of the Oregon State Highway Department, Mr. Fowler and I have come here this morning to defend the choice of the City of Portland for the new Fremont Bridge which crosses the Willamette River in the City of Portland and is a part of the new freeway route at this point.

By way of background, on August 29, 1963, the Highway Department was requested by the City of Portland to give consideration to the employment of a nationally-recognized engineering firm to pass on the design and construction of the Fremont Bridge. Acting on that request, the Highway Department notified the City that the consulting firm of Parsons, Brinckerhoff, Quade, and Douglas had been employed for that purpose, and in August of 1964, the consulting firm submitted seven designs to the City of Portland with the request that the City Council select the design they liked best and that the Highway Commission would build the structure selected. (I should interject here that the Marquam Bridge, which crosses the Willamette River further upstream, and also a part of the freeway system, was then under construction.) The Marquam Bridge consists of eight lanes, double deck, four lanes in each direction. As soon as this structure started to take shape, there was a tremendous objection from citizens, and particularly from the professional and esthetic-minded groups of the community. It was called an erector set bridge, with an ugly appearance and certainly nothing that added to the attractiveness of the community. It was in this atmosphere that the Council was requested to select one of the seven designs submitted for the Fremont Bridge.

To assist the Council in this selection, the Mayor invited the Art Commission, the professional engineers and the architects, along with members of the Planning Commission and its staff, as well as the Traffic Engineer, the City Engineer, and the Highway Coordinator, Mr. Fowler, who is with me, to study the seven proposals and also recommend to the Council their selection.

In the meantime, the Professional Engineers of Oregon asked the Council to consider another design submitted by Storch & Associates in collaboration with the CBA Engineering, Ltd. of British Columbia, being a stiffened tied arch with orthotropic upper deck with a main span of 1350 feet, and also a design submitted by Dexter Smith and George Griffin, registered engineers of Oregon, who submitted a suspension design bridge. I called the Highway Commission offices at Salem and asked if the stiffened tied arch proposal and the suspension proposal could be considered in the selection of a design for the Fremont Bridge and was assured that whatever design of bridge the Council selected would be considered by the Highway Commission.

During this period of time, a member of the consulting firm, along with representatives of the Highway Commission staff, the City Council, representatives of the City Engineering Bureau, members of the Planning Commission and staff, the architects, and professional engineers held a special session to which all news media were invited. At that time, Mr. Quade of the consulting firm, and the Highway Commission, explained each of the seven designs submitted by the Parsons organization. Within that same week, those supporting the stiffened tied arch design also presented to the same group the features of their structure, and also those supporting the suspension design were given an opportunity to present and discuss with all concerned the reasons why the suspension type bridge should be selected.

On November 23, all groups got together and reported back as follows - that any one of three designs would be satisfactory - and I so reported the findings to the City Council. It was the judgement of these various groups that No. 1, Design 7, being the orthotropic by the Highway Commission and No. 2, the proposal for a suspension bridge by Smith and Griffin, and

No. 3, being the tied arch orthotropic deck similar to the bridge at Port Mann, B. C., would be accepted. After further study by the Council and our local engineering staff, it was my recommendation that the design submitted by Storch & Associates, being the stiffened tied arch orthotropic, would be most satisfactory and carried more esthetic appeal and was more attractive in other respects than all the designs submitted, and I so recommended its approval. The Council accepted that recommendation and advised the Highway Commission of its choice. About a year later, in July of 1965, the Council was advised by the Highway Commission as follows:

"In line with your recommendations and so that truly comparable costs of various designs could be obtained, Parsons, Brinckerhoff, Quade, and Douglas were asked to analyze and estimate a design similar to the Port Mann Bridge in British Columbia. Because of the interest and desire of some individuals for a suspension bridge, the firm was also asked to estimate this type. For comparative purposes, we also asked for an estimate for a conventional full-span cantilever bridge which, it was felt, would probably be the most economical."

In July, 1965, the consultants submitted, for the consideration of the Council, three designs with costs, being Design S-1, the stiffened tied arch with orthotropic upper deck, Design S-2 externally-anchored suspension bridge, and Design 3, through cantilever truss. Each of these designs provided for 1100 to 1300' main span. They indicated that both the suspension bridge and the stiffened tied arch were too costly for consideration.

This was the first indication the Council had, as well as the community itself, that the cost of the structure would be the determining factor in the design of the bridge.

It is the general feeling throughout the City that Design S-3, being the through cantilever truss, is very ordinary in appearance and is a very common type of bridge that you see in many parts of this country and certainly offers nothing that is challenging to the imagination of the citizens of Portland. We have five or six bridges across the Willamette now, and the most outstanding one is the suspension bridge downstream in Portland. All other structures are of much older design and nothing unusual in appearance. On this Fremont Bridge, we have an opportunity to add something outstanding in the way of a design for a bridge, as well as something new and different in the development of engineering on bridge structures, and we are in deep disappointment that esthetic values, as well as imagination in bridge engineering, have to be dropped to the bottom of the list because of cost.

Bridges are structures that stand for 100 years or more and, in their development and design and engineering, should and must offer something in keeping with the time in which we live and should not be a repetition of the mediocrity of days gone by.

It is interesting to note that the national administration is repeatedly calling attention to citizens and communities alike that, in changing the face of America, it should be accomplished with all the beauty and all the charm, and with all the skill and the imagination of those developing projects and structures today.

Across this nation, we are spending billions of dollars to clean up, to dress up, and to beautify our cities, and I say to you that here is an opportunity for the Highway Department to contribute something to that program in Portland. I have not noticed, in all other programs of beautification and face-lifting, that the dollar sign has been the most important

consideration, and I cannot believe that the dollar sign should be the controlling factor in the design of a bridge which is a part of the federal freeway system. I believe esthetics are just as important as any other consideration in the design and construction of a bridge or any other private or governmental project that will endure the ravages of time. It is interesting to read, in a recent issue of Fortune magazine, comments by the author on bridges around the world. If there is one thing that catches the eye of the reader, it is the effort of engineers to do something different, something more beautiful, and something that will challenge the imagination of people, as well as be a living tribute to the designs of our time. I believe Portland is entitled to no less consideration in the selection of a design for this Fremont Bridge.

I have heard it said that the stiffened tied arch orthotropic design is one that has been used very little in this country, but its concept is not new, and that we lack experience with the structure, particularly the double deck feature. It cannot be true that there is no room to try something different, something with more esthetic appeal in the design of a bridge and, if engineers are to hold to the concept that it should not be done because we have not had too much experience with it, then I say to you that architects and engineers are going to keep on doing exactly the same thing they have done for 300 years by repeating what they have done in the past and leaving no room for challenge or imagination in the future.

At a meeting with representatives of the Highway Commission and representatives of the City of Portland, Mr. Quade made the statement that there is nothing structurally wrong with the stiffened tied arch design, but there may be some room for further investigation as to the flexibility of the structure. I am not an engineer. Mr. Fowler is an engineer with

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considerable experience in bridge design in my area, and he tells me that there is quite some room for argument as to the cost of the stiffened tied arch as estimated by Parsons organization and the costs as supplied by the engineers of the Port Mann design. It does seem strange to me that there should be some 2 million dollars difference in estimate from about the same people using the same supplier and using the same type of concrete, and with less foundation problems than that experienced at Port Mann.

Frankly speaking, Portland wants a stiffened tied arch design, and Portland is going to do all within its power in an effort to convince the Bureau of Public Roads that this type of design is what we are going to give every support to. The Oregon State Highway Commission informed me that they are going to do all they possibly can to get approval of the stiffened tied arch structure, and we are here to give our utmost support to the Highway Commission and its engineering staff.

WAB:dl

November 4, 1965

RECEIVED
APR 4 - 1967

H. E. MOY
SECRETARY
CHIEF ENGINEER

F-405-B(12)303
7276

FORM 1812

SPOKANE, PORTLAND AND SEATTLE RAILWAY COMPANY

OREGON TRUNK RAILWAY
OREGON ELECTRIC RAILWAY COMPANY
RUTH REALTY CO.

OFFICE OF CHIEF ENGINEER

1101 N. W. HOYT STREET
PORTLAND, OREGON, 97207

June 24, 1966

RECEIVED
JUN 2 . 1966
CONSTRUCTION
DIVISION

Routing

Reed. E
Moreleck
Trout
Scott
Wills
Litchfield
Olson

Bond
Barbee
Walker
Olson
Swan

Mr. T. W. Litchfield
Utilities Liaison Engineer
State Highway Department
Salem, Oregon 97310

Dear Sir:

I have your letter of June 21, 1966, as well as print of Design SIC for the Fremont Bridge here in Portland, Oregon.

The prints you have furnished are not complete enough for an intelligent review of the situation that will exist on the properties of the S.P.& S. Railway at the time the Fremont Bridge is constructed. Until such time as you can give me a detailed layout to the scale of 1" = 50' of the entire area in question, including the relocated grade crossing between Thurman Street and Front Avenue, I will not be able to comment on this matter. When I speak of a detailed layout I have in mind that all of the switches should be tied in or so located that easy reference can be made to proposed changes. I suggest that the same information be furnished Chief Engineer Thomas of the Portland Terminal R.R. Company.

When I receive this information from your offi[ce] I will then proceed on a review of same.

Very truly yours

Copy to Hesla for preparation of sketch.

Chief Engineer

HFM-o

7-1-66

T

NOTED
R L FOSTER

RECEIVED
JUN 27 1966
FORM E-20 SOM 10-65 SP*23401-734
R FILING

I-405-8(17)303
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
June 20, 1966

SUBJECT:

To: MEMO TO FILE

After recent notification by the Bureau of Public Roads of their approval of a design for the proposed Fremont Bridge on Interstate Route 405 in Portland, the committee on selection of consultants met to choose an engineering firm to proceed with the detailed design and preparation of specifications.

The recommended and approved design being somewhat unique limits the field of competent engineers considerably. We know of no one locally who has had experience with orthotropic construction and, particularly, a combination of such construction in conjunction with a statically indeterminate system as is incorporated in the recommended and approved design.

Based on the committee's knowledge, the following firms were given consideration: Sverdrup & Parcel; Howard, Needles, Tammen & Bergendoff; Parsons, Brinckerhoff, Quade & Douglas; and C.B.A. of Vancouver, British Columbia. C.B.A. has made a strong effort to obtain this assignment. They have gone so far as to form an Oregon corporation by associating with some local individuals for, as far as we can tell, the express purpose of undertaking this project. While this might give the firm an image as a local organization, they are basically a Canadian concern. We understand further that they, at least in the past, have made use of European talent because of the then favorable labor market.

While the committee has no desire to discriminate against a foreign organization, we do believe that, everything being equal, a domestic engineer or engineering firm should be selected.

The committee is faced with a difficult situation to make a selection between Sverdrup & Parcel; Howard, Needles, Tammen & Bergendoff; and Parsons, Brinckerhoff, Quade & Douglas.

As far as we know, all of these firms are highly competent, have had vast experience in various types of bridges and structures, and all can undertake the work promptly and expeditiously.

After somewhat lengthy and deliberate consideration, it is the committee's judgment that in this instance Parsons, Brinckerhoff, Quade & Douglas should be offered the assignment. This is based on the fact that they have done the preliminary work on the type of structure desired, have considerable knowledge of this Department's wishes and requirements, and because they handled the preliminary work in a satisfactory manner.

R. L. Porter
Deputy State Highway Engineer

Tom Edwards
Assistant State Highway Engineer

F. B. Klaboe
Assistant State Highway Engineer

RLP:ms
cc Forrest Cooper
Victor D. Wolfe

RECEIVED
JUN 21 1966

Form CD-121
(11-63)
(Prec. by
A.O. 204-1(a))

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

I-405-8(17)303
7276

TO : Mr. ~~Forrest Cooper~~, State Highway Engineer
Salem, Oregon

DATE: June 20, 1966

In reply refer to: 08-35.6

cc Edwards
Klabo
Porter
6-22-66

FROM : A. W. Parsons, Division Engineer
Salem, Oregon

A.W. Parsons

SUBJECT: Oregon Project I-405-8(1)301
Fremont Bridge

4673

With reference to your letters of May 25 and June 7 we now approve Design S-1C with 57' roadway.

To provide greater freedom of movement and more room for disabled vehicles our Washington office has suggested an alternate roadway cross section which they believe will provide greater usable width without increasing the overall roadway width. The alternate cross section is shown on attached copy of sheet L-12-66 and is furnished for your consideration.

The above information was phoned to Mr. Edwards by Mr. Tokerud on June 16.

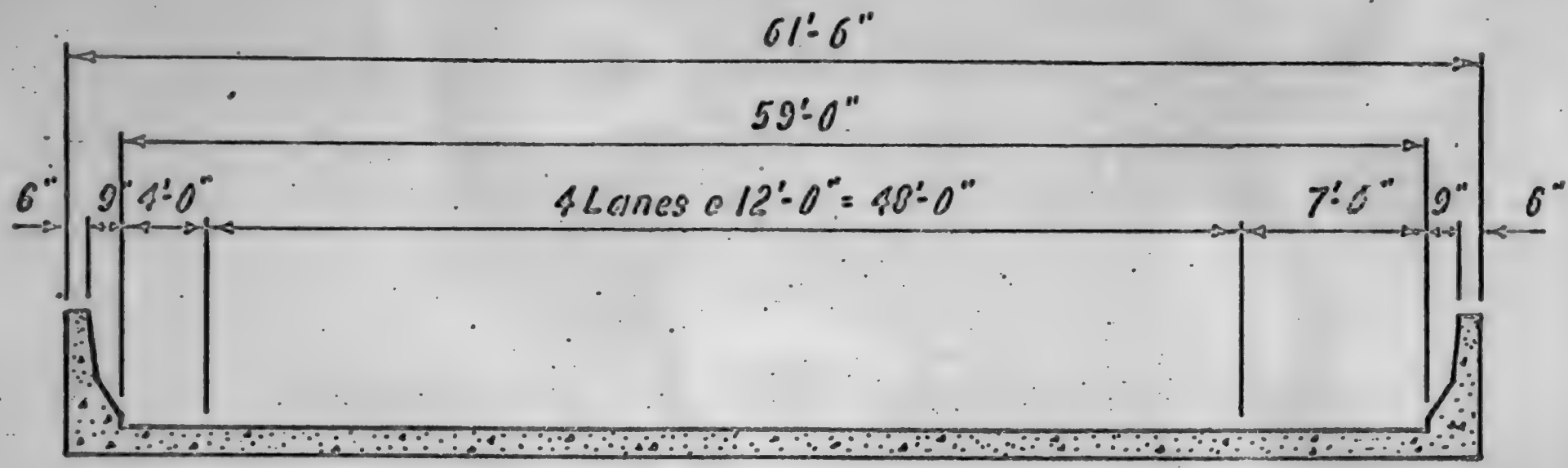
Enclosure

R. L. Porter

Copy to Merchant 6-23-66

RECEIVED
JUN 21 1966
OFFICE
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN



SUGGESTED ROADWAY CROSS SECTION

FREMONT BRIDGE
over
the Willamette River
Portland, Oregon

June 1966 Sheet L-12-66

Section approved
6/28/66

RECEIVED
JUN 8 - 1966
FOR FILING

I-405-8(17)303

7276

June 7, 1966

Mr. A. W. Parsons, Division Engineer
Bureau of Public Roads
477 Gestaga Street, N. E.
Salem, Oregon

Dear Mr. Parsons:

File: Oregon Project
I-405-8(1)310
Fremont Bridge

Please refer to our letter of May 10, your letter of May 17, and to Mr. Tolmoud's telephone call on June 2 relative to the selection of a design for the proposed Fremont Bridge.

It is requested that our May 10 letter be cancelled and in lieu thereof this Department requests Bureau of Public Roads approval for Design 8-16 with a 37-foot deck. This is the alternate that is estimated at $17,220,000 in Table 7 of the second supplementary report by Parsons, Brinckerhoff, Quade & Douglas, dated April 1966.

Our reasons for recommending the 37-foot deck are contained in Mr. Edwards' letter of May 25.

This request is in line with your May 17 letter which we had considered to be Bureau of Public Roads approval for this particular alternate.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms
cc Forrest Cooper
Tom Edwards
Victor D. Wolfe

RECEIVED
MAY 26 1966
FOR FILING

I-405-8(17)303
7276

May 25, 1966

4673

Mr. A. W. Parsons
Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon

Your File: 08-35.3

Dear Sir:

In our letter of May 10, 1966 we indicated that our justification for increasing the width of the Fremont Bridge to 57 feet would be forthcoming in the near future. The following is a summary of the major reasons which we feel definitely indicates the width of the Fremont Bridge should be such as to permit a six- to seven-foot shoulder for stopped vehicles.

In a previous letter dated May 9, 1966 concerning justifying six-foot shoulders on the proposed structure on Interstate 205 between Oregon City and West Linn, data were supplied indicating the expected reduction in accidents. This same information applies as well to the Fremont Bridge in regard to the necessity for carrying a continuing shoulder across the structure. Further reasons for providing shoulders on structures are very well stated on pages 155 and 393 of AASHO's manual entitled "A Policy of Arterial Highways in Urban Areas".

In addition to these reasons supporting an emergency parking shoulder, it should also be brought to your attention that approximately 80 percent of the traffic on the Fremont Bridge will be involved in either weaving or merging maneuvers. Since this involves an expected 1986 ADT of 71,000 vehicles, we are speaking of a great number of possible motor vehicle conflicts. There are attached two illustrations showing the anticipated 1986 traffic on the structure and the expected design hour traffic for the same period. On the basis of an ADT of

71,000 vehicles and an average trip length of five miles, it has been determined from Figure 16 of the publication entitled "Means of Locating and Communicating with Disabled Vehicles, Interim Report" by the Highway Research Board that we can anticipate between eight and nine emergency stops on the structure per day. During a typical peak hour we can anticipate an average of one and one-half emergency stops. The aforementioned report on page 14 indicates that only about five percent of the emergency stops occur in-lane and of these 46 percent are able to move on to a shoulder or continue on. This means that where a shoulder has been provided for an emergency stop, only three percent of the vehicles forced to make an emergency stop remain in-lane until given assistance. This means that on the Fremont Bridge less than two vehicles per week would remain in-lane blocking traffic and causing additional hazards to the through traffic. This is as against a total of 58 emergency stops which would be made in-lane during a one-week period without the provisions of a shoulder area.

From a safety standpoint, the subject report on page 15 indicates that the probability of being involved in a shoulder accident is one hundred times less than the probability of being involved in a driving accident. The potential reduction in accidents by providing the shoulder area is clearly indicated.

It is quite evident that the number of emergency stops on the Fremont Bridge without a parking shoulder will necessitate a traffic surveillance system. Again, in reference to the Interim Report, the cost for such a system would undoubtedly exceed $50,000 per year and could run as high as over $100,000 per year. Additional costs to the motorist resulting from more frequent accidents can also be expected without the shoulder.

None of the above have taken into account the problems which will occur in getting emergency vehicles to an accident on the structure. With the facility having the two directions of travel stacked one on the other, it will not be possible to bring emergency vehicles to a wreck from the opposite direction unless such emergency vehicles operate against traffic. From this standpoint, it may be highly desirable to provide a

shoulder of a sufficient width to allow an emergency vehicle to use such a shoulder. In the case of an accident requiring immediate medical attention, getting an ambulance to the scene could possibly mean the difference between a serious injury or a fatality. With 80 percent of the traffic using the Fremont Bridge involved in either weaving or merging maneuvers, we can undoubtedly expect accidents of this type to occur.

In reviewing the data which have been published in past reports and manuals, it is evident that they all highly recommend that shoulders be provided on high capacity facilities. In view of the maximum effort being made by highway engineers to reduce the accidents on the nation's highways, we feel that the additional costs for providing the shoulder on the Fremont Bridge is more than justified.

Very truly yours,

Forrest Cooper
State Highway Engineer

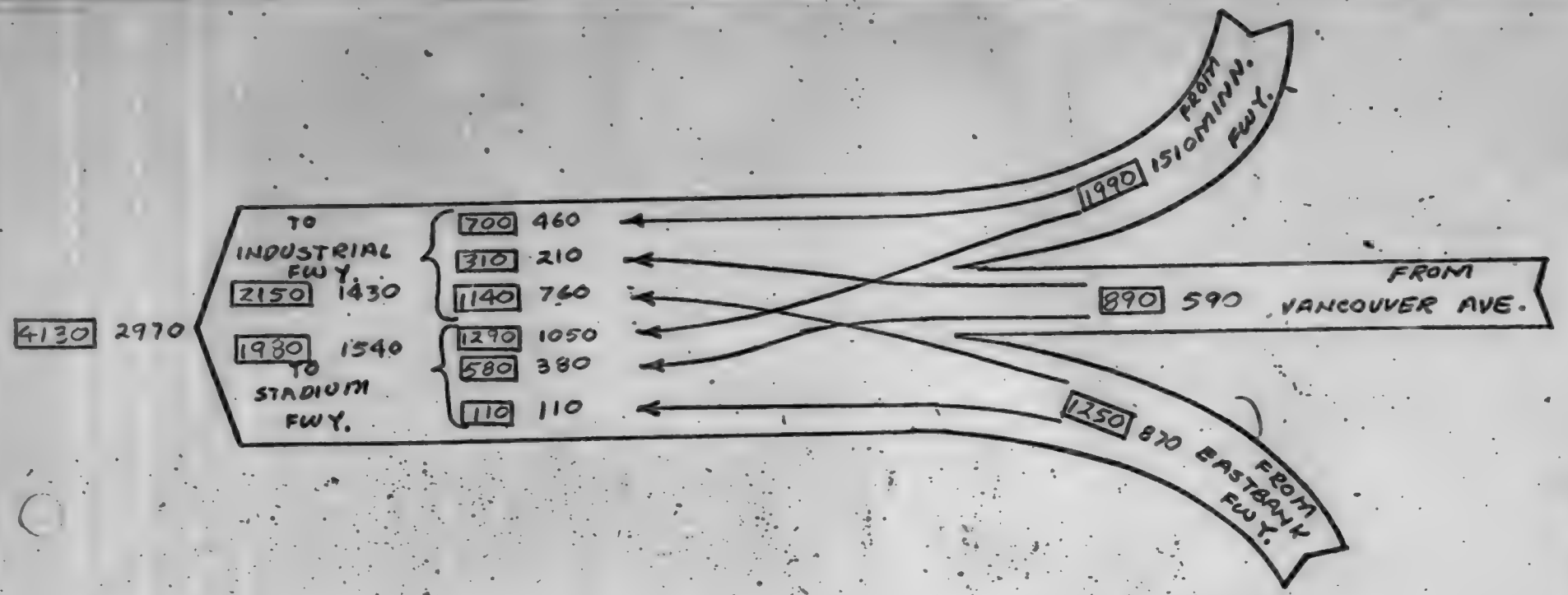
By

Tom Edwards
Assistant State Highway Engineer

Attachments

bc Forrest Cooper
R. L. Porter
F. B. Klaboe
Victor D. Wolfe
F. B. Crandall
Ivan Merchant
L. H. Young

RLSchmp jwa



FREMONT BRIDGE

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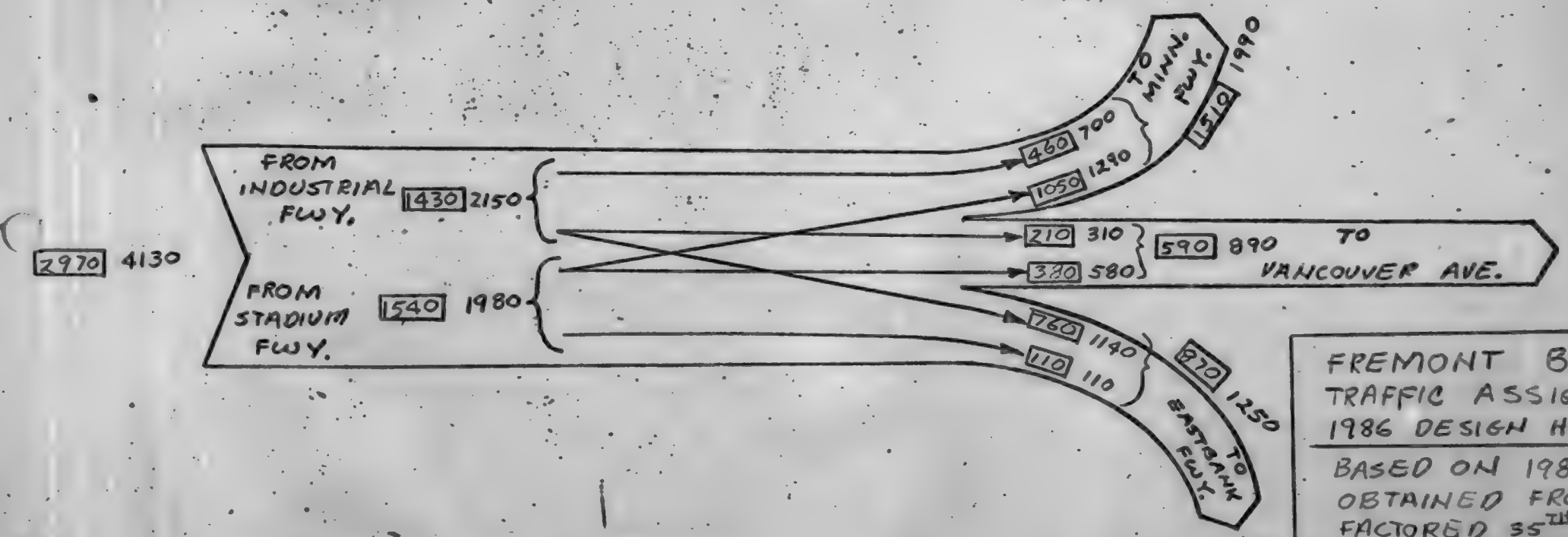
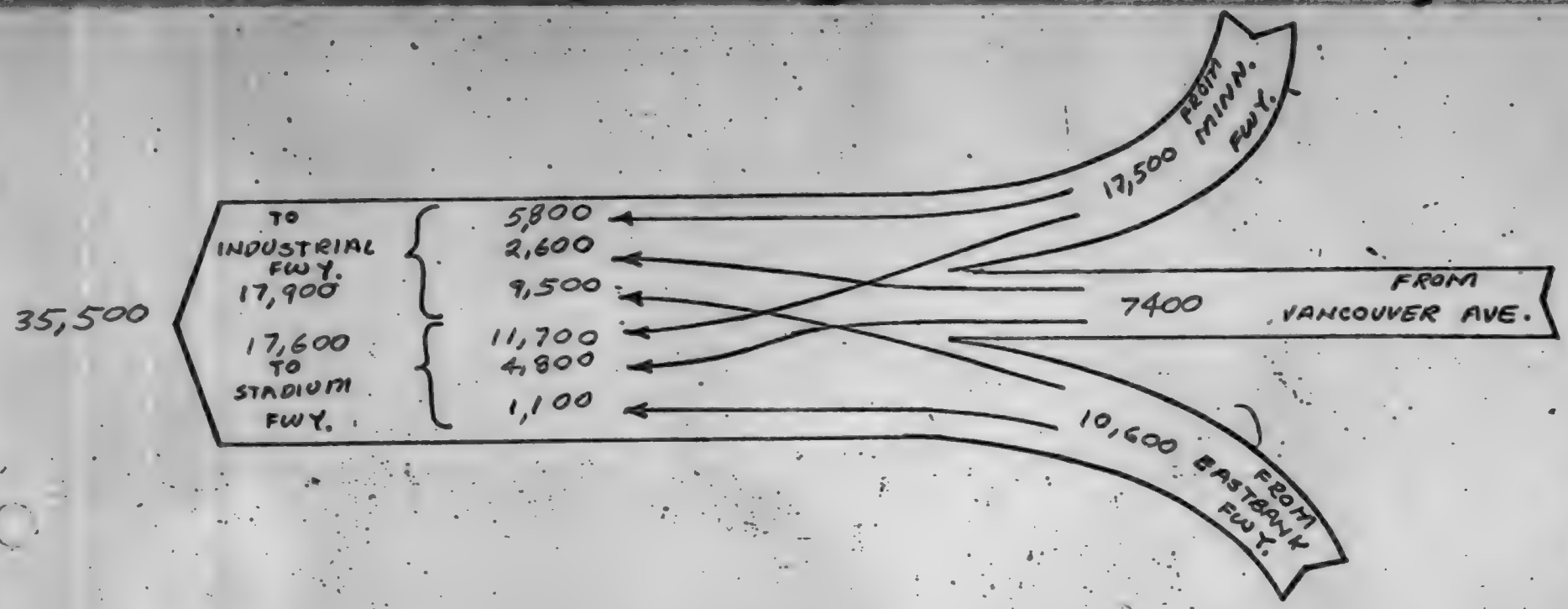


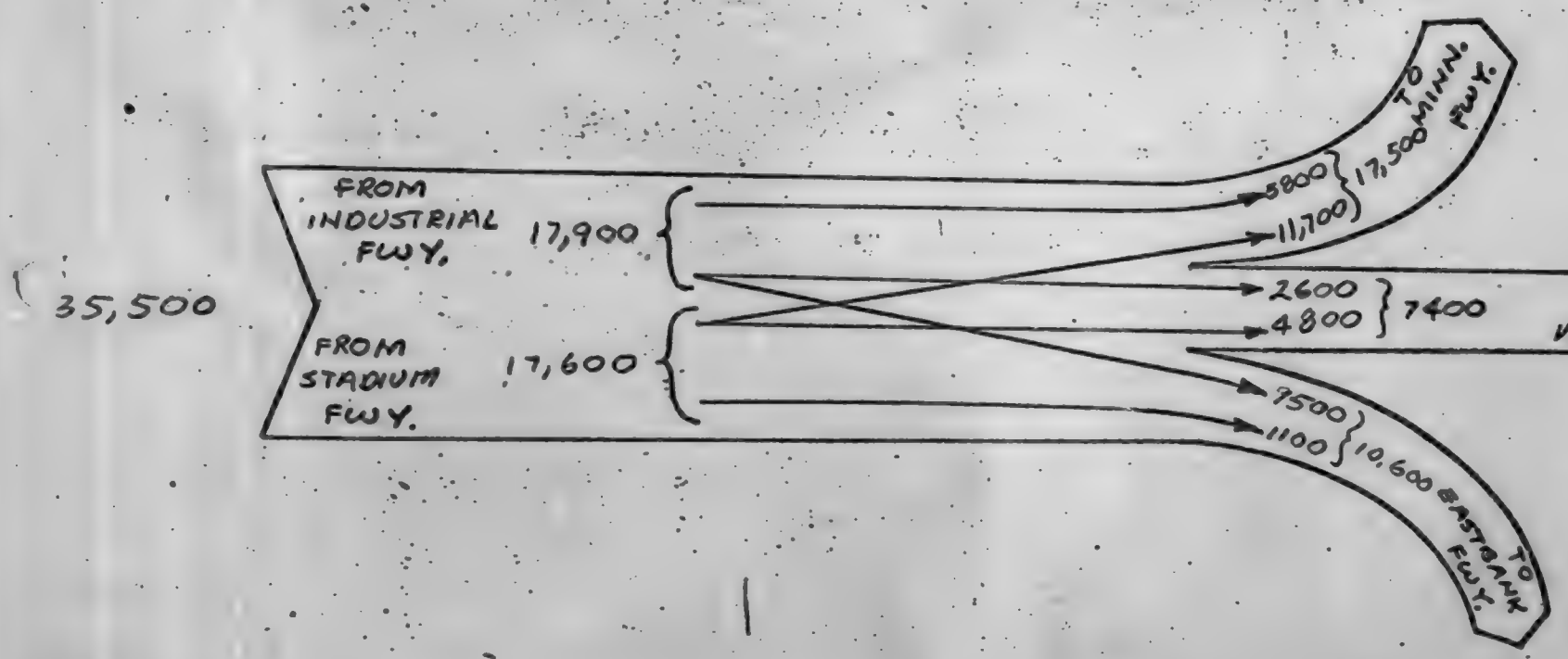
FREMONT BRIDGE
TRAFFIC ASSIGNMENT
1986 DESIGN HR. VOL.

BASED ON 1986 ADT OBTAINED FROM THE FACTORED 35TH FTC LOADING. SYSTEM INCLUDES A MT. HOOD FWY AND I-205 (96TH)

AM PM 5-17-66



FREMONT BRIDGE



FREMONT BRIDGE
TRAFFIC ASSIGNMENT
1986 ADT

OBTAINED BY FACTORING 1980 ADT BASED ON THE 35TH FTS WHICH INCLUDED A MT. HOOD FWY. AND I-205 (96TH)

5-17-66

FORM E-123X 20M 4-63

COMMISSIONERS
GLENN L. JACKSON, CHAIRMAN
MEDFORD
KENNETH N. FRIDLEY, MEMBER
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

May 10, 1966

Mr. A. W. Parsons, Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon

RECEIVED
MAY
PORTLAND

Dear Mr. Parsons:

Reference is made to the Second Supplementary Report on Additional Designs for the Fremont Bridge in Portland, dated April 1966. This is an Interstate Project I-405-8(1)301. These are the designs and data that were prepared by the consultant in line with your request dated November 19, 1965.

On this date a meeting was held in the Highway Engineer's office attended by the following persons: A. W. Parsons, Ted Dee, and Ray Tokerud of the Bureau of Public Roads; Commissioner Wm. Bowes of the City of Portland; and Forrest Cooper, R. L. Porter, and Tom Edwards of the State Highway Department. It was agreed that the State will recommend to the Bureau of Public Roads that the consultant's Design S1A be approved. The recommendation for this structure is based on the reasons outlined on page 33 of the report and from the thinking by Commissioner Bowes that this design would be acceptable to the City of Portland. Further reasons supporting this recommendation are contained in the report and we feel are sufficient to justify this general type of structure.

It is this Department's hope that the Bureau of Public Roads will approve a 57-foot roadway; however, in the interest of time, we request consideration first as to the type of structure and we will furnish our justification for the 57-foot roadway in the very near future.

May we have your approval of Design S1A. We further request as expeditious handling as possible on this recommendation.

Copy to Schrader
Provide please
W/ltr

Very truly yours,

NOTED
TOM EDWARDS

Forrest Cooper
State Highway Engineer

By ORIGINAL SIGNED
R. L. PORTER
R. L. Porter
Deputy State Highway Engineer

bc: Commissioner Wm. Bowes
(with 2 copies of report)
Forrest Cooper
Tom Edwards
Victor D. Wolfe

RLP:ms

RECEIVED
MAY 17 1966

FORM CO-121 (9-22-59)
(FHWA) (BPR) (A.D. 205-10)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

FOR FILING
I-405-8(17)303
7276

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

DATE: May 17, 1966

A. W. Parsons

FROM : A. W. Parsons, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(1)310, Fremont Bridge

In confirmation of my phone call to Mr. Porter on May 13, we quote below the wire comments received from our Washington office:

"RE YOUR MEMO MAY 11, OREGON I-405-8(1)310 FREMONT BRIDGE AND "SECOND SUPPLEMENTARY REPORT ON ADDITIONAL DESIGNS" APRIL 1966. ORIGINAL RECOMMENDATION CONTAINED IN ORIGINAL REPORT OF AUGUST 1964 AND SUPPLEMENTARY REPORT OF JULY 1965 IN WHICH WE CONCURRED, WAS FOR DESIGN NO. 6 CONTINUOUS TIED ARCH ESTIMATED AT $16,690,000. ON THE BASIS OF THIS CONCURRENCE, WE NOW RECOMMEND ADOPTION OF DESIGN S-1C(52) ESTIMATED AT $16,450,000. IF THE NEED FOR ADDITIONAL FIVE-FOOT ROADWAY CAN BE PROPERLY DOCUMENTED DESIGN S-1C(57) WILL BE CONSIDERED. ESTIMATED COST $17,470,000. IN VIEW OF PORT MANN BRIDGE AND SIMILAR BRIDGES NOW BEING DESIGNED, WE SEE NO VALID REASON FOR RECOMMENDING THE COSTLIER DESIGN S-1A PROPOSED BY CONSULTING ENGINEER. THE REASONING PRESENTED IN SUPPORT OF THIS DESIGN, PAGE 33 CONSULTANT REPORT OF APRIL 1966 UNDER CONCLUSIONS AND RECOMMENDATIONS IS NOT CLEAR TO US.

E. L. ERICKSON
ROADS
WASHINGTON, D. C."

Copy to Maintenance 5.18.66

Copy to Cooper Engineer 5.18.66

NOTED
R. L PORTER

RECEIVED
MAY 4 - 1966
FOR FILING
I-405-8(17)303
7276
W. G. JOHNSON
SUPERINTENDENT
OREGON DIVISION

UNION PACIFIC RAILROAD COMPANY
TRANSPORTATION DIVISION
DEPARTMENT OF OPERATION

May 3, 1966

2525 NO. LARRABEE AVE.
PORTLAND, OREGON 97227

File: D 9010 - 32 - 17

Mr. Forrest Cooper,
State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310

Attn: Mr. F. B. Klaboe,
Asst. State Highway Engineer

copies
REFERRED TO
BPR - Merchant - Porter
Litchfield, Barbee, Roble
Johnson, Moehring 5-4-66
BY ASST. STATE HWY. ENGR.

Dear Sir:

Please refer to the meeting between Railroad and Highway representatives held on April 14, 1966 in Portland to discuss pending construction of the Fremont Bridge and the E. Fremont Interchange over the Willamette River and Union Pacific Railroad's Albina Yards in Portland.

In line with discussions at the meeting, I wish to reaffirm the Railroad's position that at State expense all existing Railroad buildings must be relocated outside easement areas to be granted the State for construction and maintenance of the bridge and interchange. As a matter of safety the Railroad does not wish to have employees of its own or its tenants' work in buildings under the highway structures during construction; and both our own operations and the business of our tenant, National Carloading, in the buildings located beneath the structure, are of such nature that they cannot be suspended during construction and then resumed. It would be impossible to make provision for our operations or for our tenants' business to be carried on elsewhere during construction and then moved back, except at extremely high cost.

In addition, we do not feel that the National Carloading building, if retained in its present location under the bridge, would be attractive to future tenants. As you are aware, this building is occupied by a forwarding company engaged in a business essential to Railroad operations and it is expected that similar usage of the building will be desired in the future. If it were to be left in its present location, even without considering the limitations placed upon access by the location of piers, the mere existence of the overhead structure with attendant nuisances and potential hazards would impose limitations upon the desirability and usefulness of the building inconsistent with its present use.

NOTED
F. B. KLABOE

RECEIVED
MAY 4 - 1966
FOR FILING
I-405-8(17)303
7276
W. G. JOHNSON
SUPERINTENDENT
OREGON DIVISION

UNION PACIFIC RAILROAD COMPANY
TRANSPORTATION DIVISION
DEPARTMENT OF OPERATION

May 3, 1966

2525 NO. LARRABEE AVE.
PORTLAND, OREGON 97227

File: D 9010 - 32 - 17

Mr. Forrest Cooper,
State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310

Attn: Mr. F. B. Klaboe,
Asst. State Highway Engineer

copies
REFERRED TO
BPR - Merchant - Porter
Litchfield, Barbee, Robb
Johnson, Moehring 5-4-66
BY ASST. STATE HWY. ENGR.

Dear Sir:

Please refer to the meeting between Railroad and Highway representatives held on April 14, 1966 in Portland to discuss pending construction of the Fremont Bridge and the E. Fremont Interchange over the Willamette River and Union Pacific Railroad's Albina Yards in Portland.

In line with discussions at the meeting, I wish to reaffirm the Railroad's position that at State expense all existing Railroad buildings must be relocated outside easement areas to be granted the State for construction and maintenance of the bridge and interchange. As a matter of safety the Railroad does not wish to have employees of its own or its tenants' work in buildings under the highway structures during construction; and both our own operations and the business of our tenant, National Carloading, in the buildings located beneath the structure, are of such nature that they cannot be suspended during construction and then resumed. It would be impossible to make provision for our operations or for our tenants' business to be carried on elsewhere during construction and then moved back, except at extremely high cost.

In addition, we do not feel that the National Carloading building, if retained in its present location under the bridge, would be attractive to future tenants. As you are aware, this building is occupied by a forwarding company engaged in a business essential to Railroad operations and it is expected that similar usage of the building will be desired in the future. If it were to be left in its present location, even without considering the limitations placed upon access by the location of piers, the mere existence of the overhead structure with attendant nuisances and potential hazards would impose limitations upon the desirability and usefulness of the building inconsistent with its present use.

NOTED
S. B. WILBUR

Similarly, limitations which would be imposed by the existence of the structure would be inconsistent with continuation beneath it of the operations now being carried on by this company in the affected buildings.

On the other hand, space available to the Railroad in this area which the State has chosen to construct its overhead structures is limited and the Railroad must provide for possible expansion of its facilities in the future. Accordingly, we will insist on retaining the right to rebuild in the easement areas, such facilities and buildings as required by the Railroad in its future operations of a design suitable for locating under the structures and complying with local building and fire codes. Although we cannot now predict the uses to which such future buildings might be put, such uses would necessarily have to be consistent with the limitations imposed by existence of the overhead structure.

Will you therefore please advise if the State is agreeable to the proposals outlined in my letter of October 5, 1964 addressed to Mr. Ivan D. Merchant, Bridge Engineer.

Yours very truly,

W. D. Johnson

cc: Mr. Ivan D. Merchant,
Bridge Engineer
Oregon State Highway Department
Salem, Oregon 97310

Mr. T. W. Litchfield,
Utilities Liaison Engineer
Oregon State Highway Department
Salem, Oregon 97310

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OREGON
STATE HIGHWAY COMMISSION

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March 25, 1966

Mr. Robert L. Herdlander, President
Oregon Section, American Society of
Civil Engineers
Post Office Box 326
Forest Grove, Oregon

Dear Mr. Herdlander:

Reference is made to your March 21 letter concerning an investigation by the Conditions of Practice Committee of the Oregon Section of the ASCE.

The Highway Commission did not solicit any proposal or comments on design for the Fremont Bridge from engineer expert Eggerss, Brinckerhoff, Quade & Douglas of New York. As of this date, that assignment is still underway. As you may know, we have tried to work closely with the City of Portland on the Fremont Bridge matter and several engineers or engineering firms submitted suggestions to the City. These were ultimately transmitted to the Highway Department but were not things that the Department requested.

The field of public relations is one of extreme complexity and is an area fraught with conflict and frustrations. In my opinion, the Highway Department does have competent people in this field but we are well aware that this does not always provide the sought-after solution. Your concern in this area is appreciated and if at any time you would care to discuss the problem with us, we will be happy to do so.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms
cc/ltr Forrest Cooper
Tom Edwards
F. B. Klobes
Victor D. Volfe

OREGON SECTION
OF THE
AMERICAN SOCIETY OF CIVIL ENGINEERS

NOTED
R. L PORTER

March 21, 1966

Address Reply To: P. O. Box 326
Forest Grove, Ore.

Mr. R. W. Porter
Deputy State Highway Engineer
State Highway Department
Salem, Oregon 97310

Subj: Fremont Bridge

Dear Mr. Porter:

As you may or may not know, the Conditions of Practice Committee of the Oregon Section of the American Society of Civil Engineers has been investigating the actions of an ASCE member regarding the Fremont Bridge Project.

Some of the pertinent facts regarding the submission of the proposal on the orthotropic bridge seem to be missing. A Board Committee met with Mr. Storch to discuss this problem and it was the opinion of this committee that Mr. Storch had very little if anything to do with the unfortunate press releases and other rather disturbing occurrences.

One of the major considerations of the committee was the manner in which the proposal was submitted to the State Highway Department. We have been unable to determine if this proposal was solicited by the commission or the Highway Department. The other major consideration is the submission of a proposal after another engineering firm has been retained to perform the preliminary study. A canvass of engineering consultants in the State of Oregon indicates that not all consultants are operating in the same manner. Some firms will not step into a project in which the preliminary report has been prepared by another firm. Other firms feel that upon completion of the preliminary report by one firm that this project becomes "fair game" for other consulting firms to move into the project. This we hope to have the consulting engineers of the State work out in their own organization to determine if it is ethical for another firm to move in to a project after the preliminary report has been prepared by others.

The Oregon Section of the American Society of Civil Engineers is extremely interested in maintaining the code of ethics established for the engineering profession. I feel sure the Board of the Oregon Section would not hesitate to take the required action if we encounter a code of ethics violation, however, this particular problem on the Fremont Bridge Project does not seem to be a clear cut case of a code of ethics violation.. I would like to take this opportunity to offer to you the services of the Oregon Section to assist the State

Highway Department in anyway possible regarding ethics or controversial engineering projects. We feel that through our membership we might in some small way help get across the engineering point of view on controversial projects.

We also feel a great deal of work needs to be done by the State Highway Department in the field of public relations. Better relations with the press, as you know can be of a great value on many engineering projects. We would urge the department to do all possible in the field of public relations to put across the honest picture of our State Highway Department and of its many engineers. The Fremont Bridge Project has taught us many lessons. Although we did not take any formal action through ASCE, we feel the Board's investigation of the Fremont Project will be of advantage to the engineers since it has shown them that ASCE is interested in maintaining the code of ethics established by our profession.

Thank you for your cooperation with our Conditions of Practice Committee. Please advise us of any help the Oregon Section of ASCE might offer your department on any matter concerning the engineering profession.

Very truly yours,

Robert L. Nordlander
President of ASCE

RLN:JJ

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MAR 23 1966
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAR 23 1966
OREGON
STATE HIGHWAY COMMISSION

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MAR 14 1966
FOR FILING

I-405-8(17)303

Form CO-121 (11-63) (Proc. by A.O. 206-16)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
477 Cottage Street, NE
Salem, Oregon 97301

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

DATE: March 9, 1966

In reply refer to: 08-35.EC/710.11
X-ref: I-405-8(3)302
X-ref: I-405-8(4)303

FROM : A. W. Parsons, Division Engineer
Salem, Oregon

By: T. Dec
Engineering Coordinator

SUBJECT: Federal-aid Interstate Highway Program

Mr. Young's February 25 letters requested minor program changes to the following projects on the subject program. We hereby approve addition of clearing of improvements as right of way work effective this date.

Item	Project	Location	Work
35C	I-405-8(3)302	Fremont Bridge-SW 14th	ROW & Clear
35D	I-405-8(4)303	Fremont Bridge Section	ROW & Clear

You are also authorized to proceed with any demolition work which is to be accomplished substantially in advance of construction to prevent development of a public nuisance and only involves the use of relatively small work forces.

Reference to our July 14, 1965 memorandum on I-5-6(25)303 may be desirable concerning documentation of contractual requirements.

Inclusion of the Appendix A clauses of your Civil Rights Assurances in the individual contracts will be necessary. A revised project agreement estimate should be furnished after award of the contracts.

This approval provides for the addition to these items of a total estimated cost of $48,300 of which $43,473 is reserved as Federal aid Interstate funds.

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OFFICE OF
STATE HIGHWAY ENGINEER

REFERRED TO
Young
ASST. STATE HWY. ENGR.
3-11-66

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

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MAR 1 - 1966
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I-405-8(17)303

W-7276

February 25, 1966

Mr. A. W. Parsons
Division Engineer
Bureau of Public Roads
477 Cottage St., S. E.
Salem, Oregon

Dear Sir:

Reference is made to PR-1 form for Item I-35D, Fremont Bridge Section, Project No. I-405-8(4)303 of the Pacific Highway in Multnomah County.

We hereby request the following be added to the "Character of Proposed Work":

Add: Building removal and demolition by State contracts, right-of-way item.

The work proposed at this time is removal and demolition of buildings located in the N. Fremont Interchange area. This removal work will be by contract on an individual parcel basis to keep the contracts small and utilize contractors with relatively small work forces.

We are sending three copies of estimate and sketch map.

Properties involved at this time are:

Tract	File	Name	Amount
646-1545	34748	Enke	$ 5,000
646-1545	34750	Fiek	9,000
646-1545	34751	Duncan	800
646-1545	34752	Seufert	7,500
646-1545	34753	Paydok	6,000
			$28,300

	Present	Removal Work	Proposed
Estimated Total Project Cost	$1,219,000	$28,300	$1,247,300
Federal Funds	1,144,547	25,473	1,150,000
State Funds	94,473	2,327	97,300

Authorization to proceed is requested as we wish to proceed with the work.

A revised project agreement estimate will be furnished after award of contracts.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

L. H. Young
Office Engineer

DAR:bb

cc: Mr. D. E. Mowbray
Mr. M. E. Hoskin
Mr. E. E. Chase

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JAN 7 - 1966
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I-405-8(17)303
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January 5, 1966

Mr. J. C. Womack
State Highway Engineer
California Division of Highways
Post Office Box 1499
Sacramento, California 95807

Mr. C. G. Prahl
Director of Highways
Washington Department of Highways
Highways-Licenses Building
Olympia, Washington 98504

Gentlemen:

Interstate construction indicates the desirability of constructing an orthotropic deck across the Willamette River in the city of Portland. We are aware of the problems regarding deck covers on orthotropic structures and are desirous of doing some research work in this regard. Orthotropic bridge decks are the current fad and there seems to be a problem with respect to durable surfacing. Some experimental work has been done, but the problem seems to be far from solved.

Preliminary data indicates that the Pavement Research Center of the Division of Industrial Research at Washington State University is interested in making some investigations. A brochure showing its equipment is attached. We also have information from the Bureau of Public Roads that the steel industry is interested in cooperating in such a study. It is our thought that valuable data could be secured from the accelerated test which would be possible at the Washington State University Research Center.

As a preliminary gesture to getting such a study initiated, I would appreciate knowing if your State would be interested in such research. At present, the indicated cost is

DE

approximately $100,000, which I would suggest be divided four ways between the States of Oregon, Washington, and California and the steel industry.

Very truly yours,

Forrest Cooper
State Highway Engineer

Attachment

cc: E. L. Branch
Regional Engineer
Bureau of Public Roads

A. H. Parsons
Division Engineer
Bureau of Public Roads

bc: R. L. Porter
Tom Edwards
Victor D. Wolfe

TE:jwa bg

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OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
October 27, 1965

SUBJECT:

To: MEMO TO FILE

On this date, a meeting was held in the Highway Engineer's office to discuss the City of Portland's request for a "stiffened tied arch" design for the proposed Fremont Bridge. The following were present:

Forrest Cooper R. L. Porter	Highway Department
Fred Fowler Norman R. Drulard	City of Portland
B. M. French A. W. Parsons Roy H. Tokerud Russell A. Stephenson	Bureau of Public Roads

Mr. Cooper explained that he has scheduled a meeting with E. L. Erickson in Washington, D. C., on November 5, at which time he will request Bureau of Public Roads' approval of this design. In case the Bureau should act favorably, he will then attempt a later meeting with Mr. Whitton in an effort to secure full Federal participation.

The remainder of the meeting was devoted to supplemental issues, such as, proper unit prices to be used in estimates; the desirability of a fixed arch versus the Port Mann design; and a discussion of orthotropic decks in general. Mr. Fowler exhibited some slides of European orthotropic construction which, while not of the Port Mann type, represent various kinds of designs that are not common to this area.

Apparently, the City of Portland will not waver from its position of demanding a stiffened tied arch design.

R. L. Porter
Deputy State Highway Engineer

RLP:ms
cc Mr. Forrest Cooper
Mr. Tom Edwards
Mr. Victor D. Wolfe

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OCT 27 1965
FOR FHWA/FLH DIV 10-20 REGION

I-405-8(17)303
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OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
October 25, 1965

SUBJECT:

To: MEMO TO FILE

L

On this date, I called A. W. Parsons, Division Engineer of the Bureau of Public Roads, and advised him of an appointment which I made by telephone with E. L. Erickson, Chief of the Bridge Division, Bureau of Public Roads, Washington, D. C. for November 5 in Mr. Erickson's office in Washington. The purpose of this meeting is to discuss in general the Fremont Bridge matter in Portland.

I asked Mr. Parsons to convey the above to Regional Engineer Baird M. French and if they wish to be present at the meeting, this would be satisfactory with me.

Forrest Cooper
State Highway Engineer

FC:fn

cc R. L. Porter
Victor D. Wolfe

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SEP 29 1965

I-405-8(17)303
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September 29, 1965

Oregon State Highway Commission

Gentlemen:

I have recently examined a brochure entitled "Current Paving Practices on Orthotropic Bridge Decks" that was prepared for the American Iron and Steel Institute by the Battelle Memorial Institute of Ohio. The report covers paving practices on orthotropic bridge decks on structures that have been erected in Europe.

You probably recall that the Fort Hamm Bridge which you recently inspected and the structure which has been proposed for consideration as the Fremont Bridge in Portland are of this type. The Parsons, Brinckerhoff, Quade & Douglas reports state that no entirely satisfactory solution has been found for this kind of construction although no distress has been observed so far in the Fort Hamm structure.

We recognize that the methods of laying asphaltic concrete in Europe are not identical with those in Canada and the United States; however, the European bridges showed surfacing distress after some two to six years of service. From reading the report, I would estimate that the Fort Hamm structure probably would not show any undue trouble before at least four years. However, you should know that asphaltic concrete on an orthotropic deck is not a completely permanent surfacing and after a period of possibly five years, extensive maintenance or resurfacing, is a strong probability.

The cost of placing a 2½-inch wearing surface on the proposed Fremont Bridge is probably in the $25,000 to $30,000 price category, with additional expense being required to remove the distressed surfacing.

A meeting has now been arranged between the Highway Commission and Mr. William Bowes, Commissioner of Public Works, and a member or two of his staff, for October 14 at 10 a.m. in Mr. Jackson's office in the Public Service Building in Portland. Mr. H. H. Gunn, our consultant on the Fremont Bridge situation, will be present, as will be representatives of the Bureau of Public Roads.

I thought you should have this information prior to the meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: R. L. Porter
Tom Edwards
Victor D. Wolfe

RLP:ma bg

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I-405-8(17)303

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Salem, Oregon
September 8, 1965

R. L. Porter
Deputy State Highway Engineer
O F F I C E

Will you please have assembled, in capsule form if possible, the utterances of the Bureau of Public Roads with respect to esthetics; I refer particularly to the Fremont Bridge.

If there are any circulars or directives, or if any person in authority in the Bureau has made public speeches or declared themselves in writing, I would like to have this put into a package in connection with the Fremont Bridge and possibly other interstate items.

Forrest Cooper
State Highway Engineer

FC:fm

cc Victor D. Wolfe

Oregon State Highway Department
September 16, 1965

ESTHETICS - HIGHWAYS AND BRIDGES

Excerpts from

"HIGHWAYS AND NATURAL BEAUTY"

("Remarks by Rex M. Whitton, Federal Highway Administrator, Bureau of Public Roads, U. S. Department of Commerce, at the 90th Annual Meeting of the American Forestry Association, Jackson Lake Lodge, Jackson, Wyoming, Monday evening, September 6, 1965.")

* * *

"But we have other responsibilities in our planning: to cause the least possible disruption or damage--and even to enhance, where possible--the locations and situations upon which our highways impinge. These include forests and wildlife habitats, parks, recreation facilities, close-knit community areas, historic and scenic sites, and the landscape generally."

* * *

"...I am happy to say that the Federal Government has been providing leadership and incentive in this direction; and I am proud to say that the Bureau of Public Roads has taken every opportunity to steer a forward course."

* * *

"I might add, too, that the highway profession is neither averse to nor ignorant of esthetics in general and roadside beautification in particular. We have been actively promoting esthetics in highway location and design for some years. The States too, have generally been attentive to this subject, as witnessed by adoption in 1961 of a Policy on Landscape Development by the American Association of State Highway Officials. In many highway locations, the view from the road and the view of the road speak proudly of our efforts."

* * *

"And we have continued to stress the basic principle, long known to and practiced by good highway engineers, that the skillful choice of route location is a major factor in the appearance of a highway and its effect on the landscape."

XERO COPY XERO COPY XERO COPY XERO COPY

Excerpt from

"A LOOK THROUGH THE WINDSHIELD"
(Motor Vehicles, Fuel Consumption, and the
Gasoline Tax in the Next 10 Years)

("Address by E. M. Cope, Chief, Highway Statistics Division, Office of Planning, Bureau of Public Roads, at the North American Gasoline Tax Conference, Denver, Colorado, August 30, 1965")

* * *

"I've said before, and it's worth repeating, that an old Chevrolet on a modern road gives better transportation than a new Cadillac on an old, inadequate road. The public knows this, too. Furthermore, it is going to insist that the responsibility for highways of the future includes meeting our social obligations--that our highways retain and preserve natural beauty, that our structures be attractive, and above all, that roads be made as safe as they can be made. And, of course, the highways must have the capacity to permit the continued growth of the Nation."

* * *

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Excerpts from

B.P.R. NEWS RELEASE OF TUESDAY P.M., JULY 20, 1965

* * *

"Addressing the National Highway Conference sponsored by the Associated General Contractors of America in Washington, D. C., Mr. Whitton stated:

* * *

"Congress, Federal officials and many States, he said, are growing increasingly aware of the need to weigh carefully the effects highways have not only on the areas through which they run but on the entire community environment and on the human values that people hold precious. If highways are to serve properly the people for whom they are intended, more emphasis must be placed on social responsibilities by all highway officials, he added."

* * *

"To safeguard America's natural and cultural resources, a regulation issued by the Bureau of Public Roads in 1963 and expanded in 1964 requires State highway departments in planning Federal-aid highway projects, to preserve and enhance fish and wildlife habitats, historic sites, parks, playgrounds and other recreation areas, Mr. Whitton said."

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Excerpts from

B.P.R. NEWS RELEASE
FOR NATIONAL HIGHWAY WEEK,
DATED SEPTEMBER 19, 1965

(Quotes from Federal Highway Administrator Rex M. Whitton,
Head of the U. S. Bureau of Public Roads)

* * *

"In the final analysis, a functional, well-engineered highway falls short of its full purpose if it does not preserve the aesthetic, cultural, historical and social values so important to our way of life."

* * *

"'The welfare of people must always be paramount,' he added. 'A utilitarian highway that ignores the environmental interests of the public can be a blight rather than a boon.'"

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SEP 1 of 1965

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OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
August 31, 1965

SUBJECT:

To: MEMO TO FILE

Chairman Jackson called this date and asked that arrangements be made for an inspection of the Port Mann Bridge in New Westminister, B. C., the following people to be invited:

The three Highway Commissioners
Baird French and a bridge engineer from the Bureau to be designated by Mr. French.
Forrest Cooper
R. L. Porter
A bridge engineer from the Highway Department
Mayor Schrunk
Commissioner Wm. Bowes and an engineer from the City of Portland.

Details are as follows:

The party will leave by plane from Gate 9 at the Portland International Airport at 9:30 a.m. on September 13.

Arrangements are to be made for ground transportation and also for an engineer from the B. C. Highway Department to accompany the people involved in the inspection.

Forrest Cooper
State Highway Engineer

FC:fn

cc R. L. Porter
Victor D. Wolfe

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SEP 1 - 1965
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7276

12642 S.W. Edgecliff Road
Portland, Oregon 97219
August 26, 1965

Mr. Alan Pierce
Chairman
Pacific Design Committee
405 N.W. 18th
Portland, Oregon

Dear Mr. Pierce:

I was pleased to read in this morning's paper of your attitude on the Freemont Bridge design. I certainly concur that the through cantilever truss bridge design is, in comparison with the stiffened tied arch or suspension bridge, a very poor third when it comes to aesthetics. It is a shame that the state and BPR officials cannot see beyond the cost of an improvement such as the Freemont Bridge, which will represent a prominent landmark for many decades.

Please let me, by way of this letter, lend my support to your position and urge you to continue your efforts to achieve an aesthetically pleasing design for the Freemont Bridge.

Sincerely yours,

Seward Weber
SEWARD WEBER

SW:mm

cc: Chairman Oregon State Highway Commission
Director Regional Office Bureau of Public Roads

RECEIVED
AUG 31 1965
OFFICE OF
STATE HIGHWAY ENGINEER

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STATE HIGHWAY COMMISSION

Copy to Commission
8-31-65

NOTED
FORREST COOPER

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AUG 25 1965
FOR FILING
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August 24, 1965

The Honorable William A. Bowes
Commissioner of Public Works
City of Portland
City Hall
Portland, Oregon

Dear Mr. Bowes:

On December 3, 1964, we were advised that the Portland City Council had adopted your report of November 27, 1964, relative to a design for the proposed Fremont Bridge.

In line with your recommendations and so that truly comparable costs of the various designs could be obtained, Parsons, Brinckerhoff, Quade and Douglas were asked to analyze and estimate a design similar to the Port Mann Bridge in British Columbia. Because of the interest and desire of some individuals for a suspension bridge, the firm was also asked to estimate this type. For comparative purposes, we also asked for an estimate for a conventional full span cantilever bridge which, it was felt, would probably be the most economical.

The consultants have now submitted their report and the Highway Commission accepted it on August 23. Six copies are enclosed for your information.

Before forwarding a recommendation to the Federal Bureau of Public Roads, we feel it would be desirable to discuss the matter with the City. Mr. Fowler was requested a few days ago to arrange for a satisfactory date and as soon as we are advised, we would like to meet with you.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: R. L. Porter
Tom Edwards
Victor D. Wolfe
A. E. Johnson

Enclosure

RLP:ms bg

RECEIVED
JUN 25 1965
FOR FILING
I-405-8(17)303
7276

Salem, Oregon
June 24, 1965

Mr. Ivan Merchant
Bridge Engineer

Tentative decision has been taken to proceed as follows on the Fremont Bridge and the bridge across the Columbia River on I-205, if and when that matter is settled:

1. The Fremont Bridge and east and west approaches: Design by consultants for the entire complex. Construction - three contracts maximum; one for the main structure and one for each interchange.

2. Columbia River Bridge on I-205: Design by consultants. Construction - under one contract.

The Columbia River Bridge, of course, will require discussion with the State of Washington.

3. On the Sunset Interchange-Fremont Bridge Section of the Stadium Freeway, design shall be based on a single wall with a 19-foot setback from curb line where this is appropriate. Decision has been taken that it will not be necessary for the wall line and the abutment line on structures to be coincident.

In view of the above commitments and decisions, it would appear that I-205 structures then will be handled by your department.

Tom Edwards
Assistant State Highway Engineer

TE:jvn

cc Forrest Cooper
R. L. Porter
F. B. Klaboe
Victor D. Wolfe

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MAY 6 - 1965
COMMISSIONERS
FOR FILING

GLENN L. JACKSON, CHAIRMAN
Portland
KENNETH N. FRIDLEY, Member
Wasco
DAVID B. SIMPSON, Member
Portland

I-405-8(17)303
7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

May 4, 1965

Parsons, Brinckerhoff, Quade & Douglas
Engineers
165 Broadway
New York, New York 10006

Attention: M.E. Fiore

Gentlemen:

Fremont Bridge

In answer to your inquiry of April 28, 1965, the comments of the Foundation Engineer are attached.

No pumping was done to determine the unit quantity of water flowing into the drill holes.

The water table at various times was noted as described in the attached comments.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

By
ORIGINAL SIGNED BY
Alfred A. Rear
A.A. Rear
Ass't. Bridge Engineer

WCH:jm
Attachments

cc: R.L. Porter

RECEIVED
MAY 5 1965
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
R.L. PORTER

A detailed description of the material identified in Anchor Hole follows:

0-29 Feet - This material is a recent alluvium high in silts below a 2-foot surface fill of gravels. This alluvial material had a moisture content near the plastic limit. Its classification is silt loam or ML.

29-50 Feet - Stratafied sandy gravels were identified with silt lenses varying from a few inches to four feet between the depths of 42 and 46 feet. The blow count (N) through the gravels ranged from 51 to 54 at two points. The four foot layer had a "soft" blow count of 15. No water under hydrostatic pressures were noted in this zone. All the gravels were "tight" and the pressure required to progress with a "Hawthorne" bit was the maximum available in the Mobil "b-40" drill used at this hole.

50-60 Feet - A zone from 51 to 53 foot depth of very open gravels were found. The driller noted that possibly there was a stream of water, but there was no evidence of excessive hydrostatic pressures here. The water level rose in the hole to the 24-foot depth below the ground surface. The casing could not be driven by the Mobil drill deeper than 50'01" below the ground surface. Due to the large size gravels (cobbles ?) drilling became so difficult that we substituted a churn (cable tool) drill at 60-feet.

60-94 Feet - A 24-hour delay occurred when the drills were changed. The water level rose during that delay period to the ground surface, but did not over flow. The cable drill found that the hole had caved in below the 55-foot depth during the 24-hour delay. Below the 60-foot depth the gravels were high in sands, and very "tight," and little or no hydrostatic water pressure was encountered until the depth of 82-feet was reached. Below the 82-foot depth the ground water was under sufficient pressure to cause a "surge" of material of from 10 to 15 feet up the 6-inch casing.

The samples taken by a 4-inch diameter open sampler known locally as a "scew" showed a very sandy gravels sufficiently dense to have an N blow count, in the second six inch depth, ranging from 70 to refusal.

Ground Water - No pumping was done in this hole to determine a unit quantity of flow.

No noticeable increase in ground water content was noted down to a depth of 51 feet.

After passing the 51 to 53-foot zone, the water level was noted at a depth of 24-feet upon the following morning. This same zone apparently furnished a slow flow of water to cause it to rise to the ground level after a 24-hour delay. From this it appears as if a reasonable water level can be maintained at the 50-55 foot level in a cofferdam by pumping.

Below the 55-foot level to the 80-foot depth the gravels appear to be tight enough to provide a reasonable seal for any sheet steel piles.

Below a depth of 80-feet ground water under a definite pressure was encountered.

W.C. Hill
Foundation Engineer

WCH:jm

RECEIVED
FEB 23 1965
FOR FILING
I-405-8(12)303
7276

February 19, 1965

Hon. Wm. A. Bowes
Commissioner of Public Works
City of Portland
City Hall
Portland, Oregon

Dear Mr. Bowes:

Reference is made to your December 28 letter requesting authority to install two 30-inch water mains on the proposed Fremont Bridge.

I am enclosing a copy of a letter from the Bureau of Public Roads on the subject. Any amplification that you can furnish would be in order but possibly this cannot be done until a definite design has been selected for the structure. Our consultants are working on several suggested alternates with the idea of coming up with a close cost estimate. As a guess, I believe it will take about two months to accomplish this work.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLPrun
enc.

cc Mr. Forrest Cooper
Mr. Victor D.Wolfe

Form CD-121 (11-63) (Prss. by A.O. 206-16)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
477 Cottage Street, N.E.
Salem, Oregon - 97301

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon
ATTENTION: R. L. Porter

NOTED R.L. PORTER

DATE: February 17, 1965

In reply refer to: 08-35.6

FROM : A. M. Parsons, Division Engineer
Salem, Oregon

SUBJECT: Installation of water mains on the proposed Fremont Bridge
(Your letter of January 5, 1965)

This office is willing to consider the installation of two 30" water-mains on the proposed Fremont Bridge providing an adequate showing can be made as outlined in the AASHO Policy on the accommodation of utilities on Interstate highways.

The difficulty and expense of installing such water lines under the lower deck can not be determined until a type of structure is selected. Another consideration which must be taken into account is the matter of aesthetics.

If the city wishes an early decision on this matter, they should furnish information soon concerning the extreme difficulty and unreasonable cost of alternate locations.

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
JAN 8 - 1965
FOR FILING

I-405-8(17)303
7276

January 5, 1965

Mr. A. W. Parsons, Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon 97301

Dear Mr. Parsons:

Attached are copies of letters from the Chief Engineer, Portland Bureau of Water Works, and Commissioner Mr. A. Bowes, relative to the installation of two 30-inch water mains on the proposed Fremont Bridge.

This Department offers no objection to such an installation and your approval is solicited.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms
att.

cc Mr. Forrest Cooper
Mr. Victor D. Wolfe

WILLIAM A. BOWES
COMMISSIONER
DEPARTMENT OF PUBLIC WORKS

G. J. LINDSTEDT
CHIEF OF OPERATIONS
L. H. ROSENTHAL
CITY ENGINEER

CITY OF PORTLAND
OREGON

December 28, 1964

Mr. Forrest Cooper
Oregon State Highway Engineer
Oregon State Highway Department
Salem, Oregon

Dear Sir:

Transmitted herewith is a copy of a letter from Mr. H. Kenneth Anderson, Chief Engineer, Bureau of Water Works, setting forth his desire to locate two 30" water mains on the proposed Fremont Bridge.

Parker NOTED R.L PORTER

This same request was made for the Marquam Bridge, and after several conferences the request was denied for several reasons, the principal one being made by the Bureau engineers to any pipelines on an interstate structure. In spite of this precedent, I believe every effort should be made to carry these mains below the lower deck where service could be maintained without interference with freeway traffic.

When the type of bridge has been decided, and before engineering details have progressed beyond the preliminary stages, we would request that a conference be held with representatives of your office, the Bureau of Public Roads, the Bureau of Water Works and the City Engineer in an effort to solve this problem and provide a service for the City of Portland.

Very truly yours,

Wm. A. Bowes
Commissioner of Public Works

WAB:FTF:pb

cc: H. Kenneth Anderson
L. H. Rosenthal

Enc.

RECEIVED
DEC 30 1964
OREGON
STATE HIGHWAY COMMISSION

CITY OF PORTLAND

INTER-OFFICE CORRESPONDENCE

(NOT FOR MAILING)

From Dept. of Public Utilities, Water Engineers

To Dept. of Public Works, Highway Coordinator

Addressed to Fred T. Fowler, Highway Coordinator

Subject SUPPLY LINES

November 24, 1964

Dear Sir:

The Bureau of Water Works is desirous of securing a greater supply of water to the West side of the river. It would be to the advantage of the Bureau of Water Works to have two 30" pipe lines installed on the new Fremont Bridge.

Please determine if the mains could be located on the bridge.

Very truly yours,

H. KENNETH ANDERSON
Chief Engineer
Bureau of Water Works

HKA:gr

RECEIVED
DEC 14 1964
FOR FILING

cc P. M. Stephenson

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

I-405-8(17)303
1 7276

Salem, Oregon
December 10, 1964

SUBJECT:

To: Mr. Ivan D. Merchant
Bridge Engineer

B U I L D I N G

This will acknowledge receipt of copies of an exchange of letters between you and Mr. Johnson of the Union Pacific Railroad Company. Your letter is dated December 2, 1964, and Mr. Johnson's October [illegible], 1964. These letters pertain to improvements under the proposed Fremont Bridge.

Upon review of the map prepared by the Railroad Company, I am rather disturbed at the implications which are portrayed. It appears that the Railroad Company is planning to have us do a complete and costly rearrangement of many of their facilities to remove them from the immediate vicinity of the proposed bridge structure. In addition to this, it appears that the Railroad Company wants to come into ownership of certain properties under the structure which we will be acquiring from other owners.

I can foresee the usual problem with the Railroad in that they will want a complete adjustment of their railroad facilities, and also full fee value for the area which the improvements formally occupied. This is completely contrary to all appraisal concepts, and should be resisted from the very beginning.

The air rights theory which the Bureau has reduced to an Instructional Memorandum (IM 21-3-62) provides for the use and occupancy of interstate right of way. The Bureau Instructional Memorandum 21-7-62 on the subject of encroachments also provides for buildings, fences, signs, billboards, towers, poles, pole lines, conduits, or any other structure or object of any kind within the right of way. Between these two memorandums, there is sufficient authority to make a taking in less than fee. From an inspection of the Railroad map, it appears that with a very minimum of column

NOTED
P. M. STEPHENSON

adjustment, all buildings belonging to the Railroad Company could be missed.

I would suggest that serious consideration be given the plan of allowing the railroad buildings to encroach beneath the structure from the very beginning as the Bureau will, without question, require such study before they will agree to participate in the right of way.

G. E. ROEDE
Chief Counsel

By

D. H. Moehring
Assistant Right of Way Engineer

DHMigs

cc - R. L. Porter
P. M. Stephenson
L. P. Shaw
G. E. Roede

RECEIVED
DEC 11 1964
OFFICE OF
STATE HIGHWAY ENGINEER

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DEC 7 - 1954

FOR FILING
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Projects
Munic - Portland

December 4, 1964

Fremont Br.

Mr. Ray Smith, City Auditor
City of Portland
City Hall
Portland, Oregon

Dear Mr. Smith:

Thank you for your letter of December 3 to which was attached a copy of a report from William A. Bowes concerning an approved design for the Fremont Bridge.

Your letter and the copy of the letter signed by Mr. Bowes are being forwarded to Forrest Cooper, State Highway Engineer.

Very truly yours,

Secretary
OREGON STATE HIGHWAY COMMISSION

FC:fm

cc Forrest Cooper

OFFICE OF CITY AUDITOR

RAY SMITH
CITY AUDITOR

CITY OF PORTLAND
OREGON

December 3, 1964

Mr. Floyd Query, Secretary
Oregon State Highway Commission
Oregon State Office Building
Salem, Oregon

Dear Mr. Query:

Enclosed please find copy of report from the Commissioner of Public Works, Mr. William A. Bowes, relative to the general design of the proposed Fremont Bridge, which report was adopted by the City Council Wednesday, December 2, 1964, and the Auditor instructed to request from the State Highway Department a model of the bridge and ramps approved by the State Highway Department, and also requesting that the State Highway Department secure architectural consultation on the lighting, sign locations and painting, etc. of the proposed bridge.

Yours very truly,

Auditor of the City of Portland

RLM:mm
Cal. No. 4585
Encl.

NOTED
FLOYD QUERY

RECEIVED
DEC - 4 1964
OREGON
STATE HIGHWAY COMMISSION

WILLIAM A. BOWES
COMMISSIONER
DEPARTMENT OF PUBLIC WORKS

O. J. LINDSTEDT
CHIEF OF OPERATIONS
L. H. ROSENTHAL
CITY ENGINEER

CITY OF PORTLAND
OREGON

November 27, 1964

TO THE COUNCIL:

On August 29, 1963, your Mayor and Commissioner addressed a telegram to the Oregon State Highway Commission requesting that a well-known and nationally-recognized consulting engineering firm be employed to submit designs for the controversial design of the proposed Fremont bridge.

On October 10, 1963, the Highway Commission entered into a contract with Parsons, Brinckerhoff, Quade & Douglas of San Francisco and New York to submit designs for the proposed structure. On August 10, 1964, the consultants submitted seven designs.

Shortly thereafter, the Highway Commission submitted the renderings to the City Council with the request that the Council select one design.

A member of the consulting firm, along with representatives of the Highway Commission staff, the City Council, representatives of the City Engineering Bureau, members of the Planning Commission and staff, and representatives of the Art Commission, held a special session to which all news media were invited. At that time, the representative of the consulting firm and the Highway Commission explained the features of each design.

Following this meeting, the Mayor instructed the Planning Commission and the Art Commission, as well as other interested agencies to discuss the designs and to submit to the Council their recommendations within thirty days.

On October 22, 1964, the Planning Commission reported all agencies had agreed that Design No. 7, being the Orthotropic Bridge, was most satisfactory, and requested further that more detailed renderings be submitted. In the meantime, two other independent designs were submitted to your Commissioner and other interested agencies in the community. One was submitted by W. S. Storch & Associates in collaboration with C.B.A. Engineering, Ltd. of British Columbia. The other was submitted by Dexter Smith and George Griffin, registered engineers of Oregon.

XERO COPY

Your Commissioner requested the Planning Commission to review the two proposals and to coordinate the review with the other local agencies. Your Commissioner also arranged for a review of the proposals with the City Council and the applicants.

On November 23, 1964, the Planning Commission submitted the report attached hereto. The last paragraph of the Planning Commission report states:

> "Based on information so far presented, the Planning Commission indicated by unanimous action on November 17, 1964, that it would be satisfied with either of the three:
>
> 1. Design 7, being the Orthotropic by the Highway Commission consultants;
>
> 2. Proposal 2, being a Suspension Bridge by Smith and Griffin;
>
> 3. Design 3, being a tied arch, Orthotropic deck similar to the bridge at Port Mann, B.C., submitted by Storch & Associates;
>
> as being selected for the Fremont Bridge."

As a part of this report, your Commissioner is making a part of this record the seven designs submitted by the Highway Commission consultants and the design submitted by Storch & Associates. The suspension bridge proposal by Smith & Griffin is not available to the Council for a part of this record as no design has been submitted.

The communications from the American Institute of Architects and the Art Commission are attached hereto.

The three designs considered most satisfactory contemplate no piers in the river.

After due consideration to the Highway Commission consultant's report and after reviewing the report and seeing the motion picture of Storch & Associates and seeing the preliminary drawing of Smith & Griffin, and after discussion with the Department of Public Works engineers, your Commissioner

RECOMMENDS

that the design submitted by Storch & Associates in collaboration with C.B.A. Engineering, Ltd. of British Columbia be approved, and further recommends that the lighting features of the Storch & Associates' design as used on the Port Mann bridge be seriously considered by the Highway Commission in awarding the contract for the Fremont Bridge.

It is further recommended that all reports and communications be filed, along with Calendar No. 4129 and 4204.

Respectfully submitted,

Wm A. Bowles

Commissioner of Public Works

B:dl

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FORM E-123X 20M 12-63
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DEC 4 1964
FOR FILING

COMMISSIONERS
GLENN L. JACKSON, CHAIRMAN
MEDFORD
KENNETH H. FITCHETT
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND

I-405-8(17)303
7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

December 2, 1964

Union Pacific Railroad Company
2525 N. Larrabee Avenue
Portland, Oregon 97227

Attention: Mr. W. O. Johnson
Superintendent

Gentlemen:

Your File Ref. D 9010-32-17

East Fremont Interchange
Bridge No. 8958

Your letter of October 5, 1964 relating to reconstruction in your Albina Yard area for the construction of the Fremont Bridge and the East Fremont Interchange has been received.

57310 - Prelim

Receipt is also acknowledged of the "Approved" prints of Drawing Nos. 19514 and 19544, together with your print indicating proposed revisions dated July 31, 1964.

As mentioned in my letter of December 23, 1963, submitting plans to you, the plans are preliminary only, and cannot be considered as the final structural layout. The final structural details of the East Fremont Interchange are contingent upon the type and details of construction for the river crossing. At the present time this matter has not been finalized. However, it is hoped that in the very near future final details of the river crossing will be determined so that negotiations may proceed in all areas of construction.

The State is not ready at this time to make any commitments or any agreements on construction details through the area in question. For this reason no comment will be made on the items listed in your letter of October 5, 1964.

As stated above as soon as the structural layout is finalized through this area, the State will desire to complete negotiations with your Company to the end that a Railroad Agreement can be prepared.

Very truly yours,

RECEIVED
DEC 3 1964
OFFICE OF
STATE HIGHWAY ENGINEER

Glenn D. Hazelhurst
Bridge Engineer

NOTED
P. M. STEPHENSON

IDH/am
cc: Mr. P. M. Stephenson
Mr. T. W. Litchfield
Mr. Walter Wright-w/att
Mr. R. H. Brown

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NOV 23 1964
FOR FILING
I-405-8(12)303
7276

November 20, 1964

Waterways Terminal Company
3838 N. W. Front Avenue
Box 3349
Portland, Oregon 97208

Gentlemen:

Your letter of November 16 requests information on the right-of-way requirements and construction of proposed Fremont Bridge and specifically requests answers to five questions.

In our letter to you on December 9, 1963, you were informed of the progress made on the project at that time and of the expected progress during the year 1964. Unfortunately at this time, type selection and span arrangements for the Fremont Bridge have not been finalized. Until span arrangements have been determined, pier locations are not definite. It is anticipated that within the next few months preliminary work will be completed on the Fremont Bridge so that the type, span lengths, and pier placements can be determined and, at that time, right-of-way negotiations will be commenced immediately.

Questions raised in your letter of November 16 will be answered in order.

1. As mentioned above, the pier placement at this time is not definite. Mention is made of ramps to the bridge ends. The deck of the bridge is in excess of 100 feet in height above Front Avenue and there will be no access to the structure in this area.

2. Reference to the letter of December 9, 1963, gives the State's position on the buildings within the right-of-way area and nothing further can be added at this time.

3. As mentioned above, as soon as pier locations are determined, right-of-way negotiations will be begun.

4. The letter of December 9 states that the first construction contract on the Fremont Bridge is slated for the year 1966. This program is still in effect.

5. As mentioned in the letter of December 9, the State will purchase a 120-foot wide strip of right-of-way 60 feet on each side of the bridge center line and require the removal of all buildings within that area.

There could be some further curtailment of operations temporarily during the construction period due to contractor's access, et cetera. Again, this cannot be determined until the pier locations and span arrangements are determined.

To conclude, it would seem that right-of-way negotiations could begin in the near future and certainly no later than mid-summer of 1965.

Just as soon as bridge plans are finalized, you will be contacted regarding the right-of-way negotiations and other like requirements.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

P. M. Stephenson
Assistant State Highway Engineer

cc Forrest Cooper
R. L. Porter
Ivan Merchant
Walter Wright
Fred Klabee

IDM:mm bbs

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DEC 8 1964
FOR FILING

WATERWAY TERMINALS COMPANY

Public Warehouse Transit Station • Interchange Between Water, Rail, and Truck

3838 N. W. FRONT AVENUE • BOX 3349 • PORTLAND, OREGON 97208

November 16, 1964

METROPOLITAN ENGINEER
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NOV 18 1964
Noted ☐ ☐ ☐ ☐ ☐
ME AME AME MOI

Mr. F. B. Klaboe
State of Oregon
Highway Department
Metropolitan Division
5821 N. E. Glisan
Portland, Oregon

Dear Mr. Klaboe:

For the past year we have anxiously awaited developments on the proposed Fremont Bridge.

For some years we have leased the building at 1788 N. W. Front Avenue known as Columbia Basin Terminals. We depend very heavily upon this building. Also, we use intermittently the property on the opposite side of the river known formerly as the Luckenbach Dock. We depend considerably on this building.

Columbia Basin Terminals building is in such a condition that we are going to have to decide soon whether to look for a replacement or invest considerable sums in repairing it. This is a difficult decision for us because of the many uncertainties involved. With the Fremont Bridge proposed to be over both the Columbia Basin Terminals at the downriver end and the center part of Luckenbach Dock, but with no information as to where the footings, pylons, ramps, etc., will be, we are handicapped severely in our planning. We have requested of your office for over the past year any information that would tell us the effect the bridge construction will have on these buildings. We also have requested this information from the lessor of Columbia Basin Terminals, the S.P.& S. Railway, but have been advised by them that they have not been approached by any member of your department.

I am sure you can understand the difficult position this lack of information places us and our concern over the matter. We sincerely hope you can convince the responsible parties how important it is that we get the information about this bridge in the very near future.

NOTED
P. M. STEPHENSON

Specifically, we would like to know:

1. Where will the supports and ramps be to the bridge at both ends? { Pontoon piers not known letter 6 12/4/63
2. What effect on the buildings over which it passes will there be? { contingent on final bridge type and span arrangement
3. When will the land be acquired over which the bridge will rest? {
4. When will the bridge be built? — letter of Dec 9-63
5. Will construction of the bridge require curtailment of operations in the areas beneath it? { yes - during const. operations

Our need for this information is most urgent.

Sincerely yours,

WATERWAY TERMINALS COMPANY

R T Fisher

Vice President and
Operating Manager

RTFisher/rp

Commissioners
DONALD G. DRAKE
President
DENNIS J. LINDSAY
Vice-President
ERLING E. JACOBSEN
Secretary
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Treasurer
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ROBERT B. WILSON

General Manager
GEORGE M. BALDWIN

Ass't General Manager
R. A. NEUMEISTER
Mgr., Aviation Dept.
J. V. FRYBERGER
Mgr., Industrial Development Dept.
L. E. ARNOLD, JR.
Mgr., Marine Dept.
A. J. HEINEMAN
Comptroller
E. W. BAUER
Mgr., Properties Dept.
C. H. COVER
Mgr., Research Planning and Inf.
W. S. DIRKER
Chief Engineer
R. F. DOW

THE PORT OF PORTLAND

Swan Island, P.O. Box 3529, Portland, Oregon 97208
Telephone 503-285-5271

In reply refer to:

October 26, 1964

Mr. Forrest Cooper
State Highway Engineer
Oregon State Highway Department
Salem, Oregon

Dear Mr. Cooper:

Subject: Proposed Fremont Bridge

The Port of Portland Commission at its last regular meeting, October 12, 1964, received a presentation of the alternate designs for the Fremont Bridge that were set forth in the Parsons, Brinckerhoff, Quade & Douglas report dated August, 1964.

orig. to Porter

The Port Commission reviewed the proposed designs as they would affect river navigation and, based on this consideration, recommends that the Oregon State Highway Department adopt Design No. 6, the continuous tied arch truss, with a 1,135-foot main span.

Sincerely,

THE PORT OF PORTLAND

for GEORGE M. BALDWIN
General Manager

NOTED
R. L. PORTER

cc: The Honorable Terry D. Schrunk

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OCT 27 1964
OREGON
STATE HIGHWAY COMMISSION

copy to FC

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OCT 28 1964

I-405-8(17)303
7276

October 28, 1964

Mr. George H. Baldwin
General Manager
The Port of Portland
Post Office Box 3529
Portland, Oregon 97208

Dear Mr. Baldwin:

Thank you for your October 26 letter stating that the Port of Portland Commission recommends Design No. 6 as prepared by Parsons, Brinckerhoff, Quade and Douglas (the continuous tied arch truss with a 1,135-foot span) for the Fremont Bridge on Interstate Route 405 in Portland.

We appreciate receiving this information and will see that it is brought to the attention of the Highway Commission.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:mm
cc Mr. Forrest Cooper
Mr. P. M. Stephenson
Mr. Victor D. Wolfe

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SEP 25 1964

FOR FILE

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7276

477 Cottage Street N.E.
Salem, Oregon 97301

September 21, 1964

08-33.7

Mr. Everett Cooper, State Highway Engineer
Salem, Oregon

Original signed by
A. W. Parsons
Div. Engineer

A. W. Parsons, Division Engineer
Salem, Oregon

Oregon Project I-405-8(A)303
Fremont Bridge Section
Parcel 34751, Dennis Investment Co.

Please refer to Staff Attorney Leslie B. Hampton's interdepartment memo dated September 17, 1964, recommending that the State secure an additional fee appraisal on the above mentioned property. Our advanced approval concerning Federal participation in the cost of the fee appraisal has been requested by Assistant Appraisal Supervisor E. W. Buell.

We concur with Mr. Hampton that an additional appraisal witness is needed in this case and will approve full Federal participation in the cost of the additional appraisal.

NOTED
LLOYD P. SHAW

NOTED
R. L. PORTER

Orig & Linda
9-23-64

copy To Young
9-25-64

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AUG 21 1964
FOR FILING

Commissioners
Robert J. Rickett
Chairman
Raymond M. Kell
Vice Chairman
Capt. Fred Shewan
H. B. Cooper
James W. Goodsell
Marshall N. Dana
Honorary Lifetime
Commissioner

OFFICES IN:
Tokyo, Japan
New York, N. Y.
Washington, D. C.

PORTLAND PUBLIC DOCKS

Operated by The Commission of Public Docks

GENERAL MANAGER
Thomas P. Guerin

3079 N.W. FRONT AVENUE • PORTLAND, OREGON 97210
TELEPHONE 228-8231 • TWX 503-224-1982
CABLE ADDRESS: "DOCOM"

I-405-8(1)303
7276

August 17, 1964

Mr. P. M. Stephenson
Assistant State Highway Engineer
State of Oregon
State Highway Department
Salem, Oregon 97310

Re: Your Letter - August 7, 1964

Dear Mr. Stephenson:

The shear leg crane represents a service to the harbor and, although it is not frequently used, it is a necessary tool that must remain constantly available.

Therefore, we do not believe it feasible to agree to blocking the channel to the crane for a period of seven months. During actual construction when prospective cargoes are known, closing of the channel for short periods would be considered.

Yours very truly,

A. M. Eschbach
Chief Engineer

AME:saw

RECEIVED
AUG 20 1964
OFFICE OF
STATE HIGHWAY ENGINEER

Copy to merchant 8-20

NOTED
P. M. STEPHENSON

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AUG 20 1964
OREGON
STATE HIGHWAY COMMISSION

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AUG 11 1964
FOR FILING

Court
Project
Hdqrs - Portland
Fremont Br.

August 7, 1964

Commission of Public Docks
3070 N. W. Front Avenue
Portland, Oregon

Gentlemen:

One of the preliminary designs for the Fremont Bridge calls for placing a river pier approximately 150 feet from the west harbor line. The center line of the proposed structure is approximately 50 feet southerly of your property where the 100-ton shearleg is located.

To construct the pier will require either working from floating equipment or building a temporary trestle from the west shore. Of course, the most economical method is to use a trestle.

If a trestle were placed between the west shore and the pier location, the area in front of the shearleg would not be usable to river traffic. It is estimated that it would require approximately seven months to construct the pier.

Would it be possible to close the channel between the west harbor line and the west channel pier for a period of seven months?

Probably the Fremont Bridge construction will not start until 1967.

We realize that it is difficult to say at this time what can or cannot be done three years hence but we need all information we can get to aid us in our planning.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

P. M. Stephenson
Assistant State Highway Engineer

cc Forrest Cooper
R. L. Porter
Ivan Merchant

PMS:bbc

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SEP 8 - 1964
FOR FILING

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OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
August 5, 1964

SUBJECT: Fremont Bridge
Bridge No. 2529

To: Mr. Fred Klaboe, Met. Engineer
Oregon State Highway Department
5821 N. E. Glisan Street
Portland, Oregon 97213

By letter of July 14 you sent us a sketch indicating the south line of the Commission of Public Docks property with a proposed right-of-way line from the Salem office and a revised right-of-way line from the Metropolitan office which would follow the face of the concrete fire wall. Also, enclosed were general details of the construction of the fire wall along the south property line of the Dock Commission property. The enclosed sketch indicated that at the west end of the fire wall there would be 10.67' from the edge of structure to the face of wall and 17.74' at the harbor line. The 10.67' is from the edge of the concrete and as this is a double deck structure there would be a truss from 3' to 4' in width which would decrease the 10.67' clearance. On the basis of a 4' truss width the clearance would be 6.67'. However, there is a considerable vertical dimension between the dock level and the bottom of the truss, and this office can see no objection to the small horizontal distance.

As at this time there seems to be no way of shifting the structure I believe we should make the revised right-of-way line the south face of the fire wall now in place without any taking of property from the Dock Commission.

As you know the Fremont structure is now in the hands of Consulting Engineers for type selection. There is a very good possibility that a construction easement will have to be obtained from the Dock Commission for pier construction of the footing. However, I do not believe that under any type of construction that the pier shafts above elevation 0 would encroach on Dock Commission property as defined by the south face of the existing fire wall.

At this time there is no way of knowing the area or location of the footings so that at the present time it would be impossible to get a construction easement. If a construction easement is required for construction of the footing on Dock Commission property it will be necessary to remove and replace after pier construction a portion of the fire wall.

I believe another matter that should be considered at that time is a permanent restriction on building by the Dock Commission adjacent to the south edge of their property. As a suggestion I would say that a

NOTED
P. M. STEPHENSON

restriction of 15' from the face of the existing wall should be required for a one-story building and 25' from the face of existing wall for any building greater in height than a one-story building.

With the above restriction I believe there would be ample safety for the structure because of the large air cushion to the bottom of steel.

Ivan D. Merchant
Bridge Engineer

IDM/mm

cc: Mr. P. H. Stephenson
Mr. Lloyd Shaw
Mr. Walter Wright

RECEIVED
AUG 6 1964
OFFICE OF
STATE HIGHWAY ENGINEER

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JUN 15 1964
FOR FILING

I-405-8(17)303
7276

June 12, 1964

Mr. A. M. Eschbach
Chief Engineer
Portland Public Docks
3070 N. W. Front Avenue
Portland, Oregon 97210

Dear Mr. Eschbach:

Reference is made to your letter of June 9 in regard to the proposed Fremont Bridge and its effect on your 100 ton Shear Leg Crane.

In determining the location for the Fremont Bridge, we deliberately moved the center line of the structure southerly a sufficient distance so that it was not necessary to acquire any of the property of the Dock Commission and we did this so as not to interfere with the operation of the Shear Leg Crane. Also, we located the first pier easterly of the west harbor line so that ships could berth under the structure.

It is not necessary to obtain formal approval for the use of your Shear Leg Crane or the space under the structure.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

F. M. Stephenson
Assistant State Highway Engineer

FMS:bw

cc Forrest Cooper
R. L. Porter

Commissioners
Robert J. Rickett
Chairman
Raymond M. Kell
Vice Chairman
Capt. H. T. Shaver
H. B. Cooper
James W. Goodsell
Marshall N. Dana
Honorary Lifetime Commissioner

GENERAL MANAGER
Thomas P. Guerin

Offices in:
Tokyo, Japan
New York, N. Y.
Washington, D. C.

PORTLAND PUBLIC DOCKS

Operated by The Commission of Public Docks

3070 N.W. FRONT AVENUE • PORTLAND, OREGON 97210
TELEPHONE 228-9231 • TWX 503-224-1982
CABLE ADDRESS: "DOCOM"

June 9, 1964

Mr. P. M. Stephenson
Assistant State Highway Engineer
State of Oregon
State Highway Department
Salem 10, Oregon

Dear Mr. Stephenson:

I have been reviewing our file concerning those facets of the construction of the Fremont Bridge that will effect the Dock Commission and, although I find general reference to the Dock Commission's use of its Shear Leg Crane, I find no specific authority for such.

As you are aware, the 100 ton Shear Leg Crane is at the southern end of the Dock Commission property immediately adjacent to the Fremont Bridge right of way. This crane is reserved for extra heavy lifts and, although used infrequently, is a necessary service of the harbor.

A ship, in order to make use of this crane, will have to berth under the bridge. Should the lift be aft on a ship, it is probable that amidship would be directly beneath the bridge. The Dock Commission has installed the necessary anchoring dolphins to care for berthing of a ship and for holding it in position once it is berthed.

Your comments concerning your opinion of necessary formal approval required by The Commission in order to assure freedom of use of this piece of equipment would be appreciated.

Yours very truly,

A. M. Eschbach
Chief Engineer

AMB:saw

RECEIVED
JUN 10 1964
OFFICE OF
STATE HIGHWAY ENGINEER

THE PRESIDENT'S "E" AWARD FOR EXPORT SERVICE

RECEIVED
JAN 22 1964
FED. PLANNING

I-405-8(17)303
Federal
7276

January 21, 1964

Mr. A. W. Parsons, Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon

U. S. Dept. of Commerce, Bureau of Public Roads, Washington

Dear Mr. Parsons:

Reference is made to the January 13 Circular Memorandum from G. H. Williams to Bureau of Public Roads Regional and Division Engineers and to Mr. Bar's letter of January 17 requesting information as to the last paragraph thereof.

On this date, a permit was received from the U. S. Army Corps of Engineers which covers the Fremont Bridge on Interstate 405. As far as we can determine, there remains the structures on 205, for which an application will be made as soon as the route has been selected. I think you are aware that the reason this last selection has not been made is that it is within the Portland metropolitan urban planning area and we are not able to move until the recommendations of about three committees have been received.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms

cc Mr. Forrest Cooper
Mr. P. M. Stephenson
Mr. Lloyd P. Shaw
Mr. I. D. Merchant

RECEIVED
JAN 24 1964

UNITED STATES GOVERNMENT

Memorandum

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

TO : Mr. Forrest Cooper
State Highway Engineer
Salem, Oregon

DATE: January 17, 1964

FROM : T. Dec
Assistant Division Engineer
Salem, Oregon

08-35.6

SUBJECT: Permits for the Construction of Interstate Crossings of Navigable Waterways

Attached are four copies of Circular Memorandum dated January 13, 1964, concerning the above subject.

Please furnish us with the information requested in the last paragraph of the Circular Memorandum.

copy to Stephenson with attach.
" " Merchant " "
1-20-64

NOTED
LLOYD P. SHAW

FORM CO-121 (5-22-59)
(PRES. BY A.O. 201-60)

RECEIVED
JAN 24 1964

UNITED STATES GOVERNMENT

Memorandum

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

Copy to Ind Accl Yan

TO : Mr. Forrest Cooper
State Highway Engineer
Salem, Oregon

Shaw Merchant Stephenson

DATE: January 17, 1964

FROM : T. Dec
Assistant Division Engineer
Salem, Oregon

08-35.6

Circ Ltr

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Please furnish us with the information requested in the last paragraph of the Circular Memorandum.

Copy to Stephenson with attach.
" " Merchant
1-20-64

NOTED
LLOYD P. SHAW

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
WASHINGTON, D. C. 20235

January 13, 1964

CIRCULAR MEMORANDUM TO: Regional and Division Engineers

FROM: G. M. Williams
32-03 Director of Engineering and Operations

GMW.

SUBJECT: Permits for the construction of Interstate crossings of navigable waterways

Information available in this office indicates that there are a number of Interstate crossings of navigable streams for which bridge construction permit requests have not been submitted to the Corps of Engineers for their review and the approval of the Secretary of the Army. Normally, the processing of a bridge construction permit, when there is a question regarding the vertical and horizontal clearances to be provided, requires at least a year. Consequently, bridge permit requests submitted late this year will probably not be approved until 1966. Considering that design will require at least a year subsequent to the receipt of the permit and the construction of the bridge will probably require another three years, this means that bridges for which permit requests are submitted after January 1965 will not be completed until 1970.

In view of the above, it appears necessary, if the Interstate System is to be completed on time, to make certain that the majority of the remaining requests for bridge construction permits necessary to complete the Interstate System be submitted this year. It is, therefore, requested that a review of the need for obtaining bridge construction permits at Interstate System crossings of navigable streams be made in each division. This office would appreciate receiving a tabulation showing the status of the bridge construction permit applications for each of these crossings and an estimate of the date on which the permit applications will be submitted to the Corps of Engineers.

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JAN 10 1964
FOR FILING

State Printing 58178

Oregon State Highway Department
BRIDGE DESIGN SECTION

F-465-8(17)303

Sheet .....

Bridge Fremont Br. County Mult.

Calculations by Christensen Date 1-9-64 Bridge No. 2529

7276

Total Costs for replacing truss with girders.

$161,000 Without Engr & Cont.
$190,000 With Engr & Cont.

(This is cost of replacing 77 lin ft of Truss with girders should end piers of Truss often be moved Toward river) ~~ahead~~.

NOTED
S. PAXSON

RECEIVED
DEC 10 1963
FOR FILING

I-405-8(17)303
7276

December 9, 1963

Interway Terminals Company
3030 N. W. Front Avenue
Box 3369
Portland, Oregon 97208

Gentlemen:

Fremont Bridge
Bridge No. 8529

Reference is made to your letter of November 19 regarding construction of the Fremont Bridge and more particularly that portion between N. W. Front Avenue and Interstate Avenue on the east side.

An application for a War Department permit has been filed with the U. S. Army Engineers, Portland District, indicating two river piers and piers approximately 300 feet from the east and west harbor lines. This pier and span arrangement is tentative only, as a thorough study is now being made to determine the final span arrangement and pier locations for the end spans.

Specific questions asked by your letter of November 19 refer to the pier approximately 300 feet west of the west harbor line. If this pier is constructed in this location, it will be possible to rebuild the ramp entrance to the Columbia Basin Terminals to provide continuing access. The center line of the proposed structure is indicated by a target on the downstream end of the Columbia Basin Terminal building. It will be necessary to remove sufficient bays from the downstream end of the building so that none of the existing building is within 60 feet of the bridge center line.

Your second question refers to the construction scheduling for this project. Right-of-way negotiations will be carried on through 1964 with the anticipation that all right-of-way will be acquired by the end of 1964. It is planned to start the first construction project early in 1966. During right-of-way negotiations of the building, reroofing and ramp construction details will be discussed with the owners.

As mentioned above, the War Department permit drawing indicates a pier about 300 feet east of the east harbor line. This pier would fall in the Ione-Wheeler Terminal building. It is the policy to remove existing privately owned buildings under structures rather than overbuilding.

In the present instance, it is believed that the State will purchase a 120-foot wide strip of right-of-way 60 feet on each side of the Fremont Bridge center line and require the building within that area to be removed. Depending on final pier arrangements, the policy of the State and the Bureau of Public Roads would permit the dockage area adjacent to the harbor line to be developed by a public body with building and use restrictions reflecting the present policy for overbuilding.

Very truly yours,

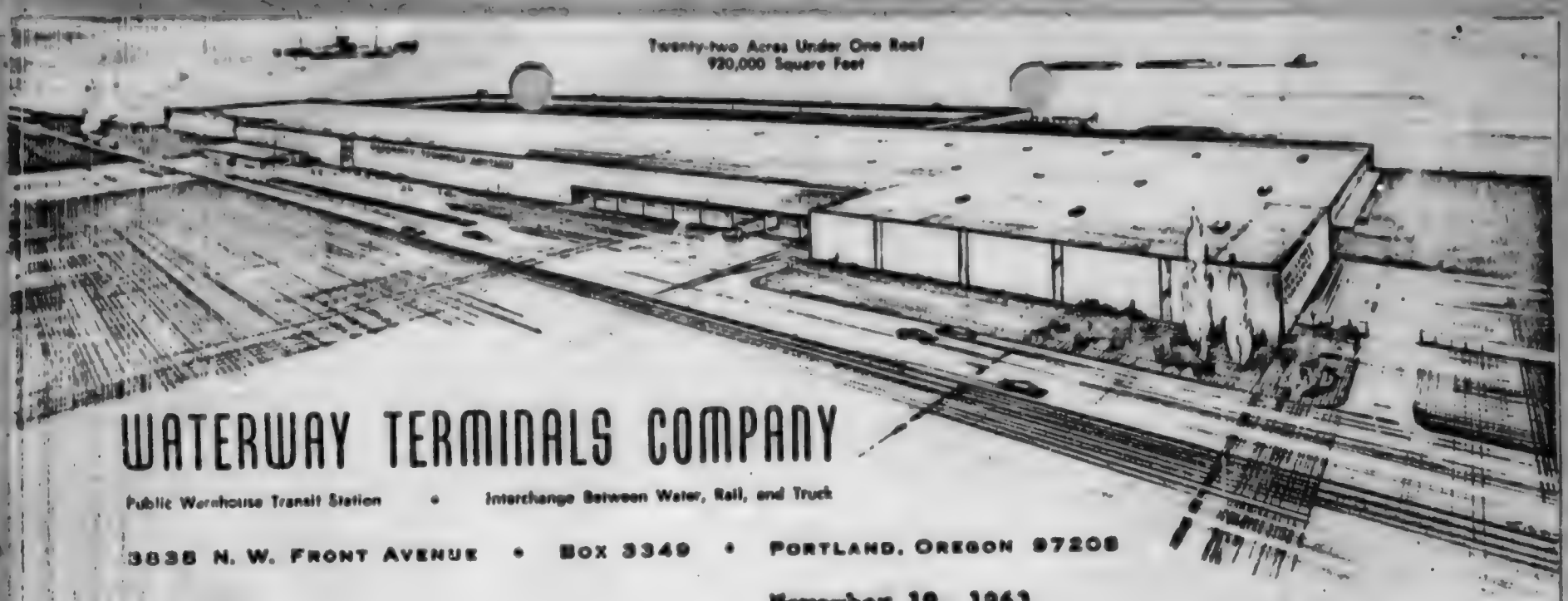
Forrest Cooper
State Highway Engineer

By

P. H. Stephenson
Assistant State Highway Engineer

cc Forrest Cooper
R. L. Porter
Ivan B. Hazelhurst
Walter Wright
Fred Klabee

IBH:jm bbc



WATERWAY TERMINALS COMPANY

Public Warehouse Transit Station • Interchange Between Water, Rail, and Truck

3838 N. W. FRONT AVENUE • BOX 3349 • PORTLAND, OREGON 97208

November 19, 1963

Mr. F. B. Klaboe
Metropolitan Engineer
Oregon State Highway Department
5821 N. E. Glisan
Portland, Oregon

Dear Mr. Klaboe:

We have received a letter from the U. S. Army Engineers, written by Colonel Sterling K. Eisiminger to which was attached a drawing showing the proposed location of the Fremont Bridge. One pier of this bridge would appear to be located in the center of a narrow ramp that leads from N. W. Front Avenue to the entrance of the building at 1788 N. W. Front Avenue which we lease in total from the S. P. & S. Railway. We have the following questions concerning this proposed bridge:

1. If the pier blocks the use of the entrance to the building, as the drawing shows, will a new ramp be constructed that would permit continued access to the building?

2. Can you tell us what the construction schedule is for this bridge. This information will be most helpful to us with respect to future lease agreements we may make about this building.

3. The plan view on the drawing indicates the bridge will pass over the downstream end of the Columbia Basin Terminals building. Will the building in its present state be permitted to exist beneath the bridge? If not, can you tell us what changes would have to be made?

The drawing also shows a bridge pier located in the Luckenbach Terminals building across the river from the Columbia Basin Terminals building. On occasion we use part of this building and such use may continue. Again, it would be most helpful to the proper course of our business if we were to know what will

Yes
start work early in 1966
complete R/W negot. by end of 1964
No - remove sufficient bays to clear bridge & by 60'
no private owned bldgs to remain. Could develop by a public body with bldg. retained

happen to this building. Will it be permitted to continue to operate and, if so, with what changes, if any?

Since some of our agreements involving these are made annually, we would deeply appreciate answers to our questions before December 1.

Sincerely yours,

WATERWAY TERMINALS COMPANY

Vice President and
Operating Manager

RIFisher/rp

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
AM NOV 21 1963 PM
7,8,9,10,11,12,1,2,3,4,5,6

I-405-8(1) 363

7276

CROSS REFERENCE SHEET

Name or Subject Erskine B. Wood File No.

Regarding Inquiry re his property. Stadium Freeway and Fremont Bridge. Date 11/7/63

SEE

Name or Subject CONSTRUCTION
Projects
Muni. - Portland - Stadium

File cross reference form under name or subject at top of the sheet and by the latest date of papers. Describe matter for identification purposes. The papers, themselves, should be filed under name or subject after "SEE."

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NOV 7 - 1963
FOR FILING
I-405-5(17)303
7276

477 Cottage Street N.E.
Salem, Oregon - 97301

October 31, 1963

Mr. Everett Cooper
STATE Highway Engineer
Salem, Oregon

Signed by
A. W. Parsons
Div. Engineer

A. W. Parsons, Division Engineer
08-35.36C Salem, Oregon

Oregon Project I-405-8(4)303
Fremont Bridge Section, Right-of-Way

In accordance with Mr. Nash's September 23, 1963 letter, our memorandum of September 25, 1963 and your FH-9 Program Change dated October 28, 1963, all concerned with the captioned project, we herein authorize you to proceed with the actual acquisition of the necessary parcels of property, effective this date. Right-of-way incidental costs were authorized by this office on March 2, 1962.

This authorization is subject to your appraisal of Parcels 35103 and 35120 on the basis that the remaining improvements be severed at the right-of-way line and allowance be made for walling the open end of the improvements. A study should be conducted to determine if a more economical solution can be arrived at in this manner rather than on the basis of removing the entire improvements.

Relocation costs for moving 16 businesses displaced by this project for an estimated amount of $25,000 is herein authorized.

Returned herewith is an approved copy of the FH-9 with the project name changed to reflect the actual project location, that is, Fremont Bridge Section rather than Fremont St. to Fremont Bridge.

This action increases Interstate funds obligated for the project by $834,000 and reduces your reimbursable obligation balance to $11,750,785 according to our records of this date.

NOTED
LLOYD P. SHAW

RECEIVED
NOV 4 1963
OFFICE OF
STATE HIGHWAY ENGINEER

original to Young
with attach.
11-6-63

RECEIVED
SEP 30 1963
FOR FILING

497 Cottage St. N.E.
Salem, Oregon 97301

September 26, 1963

Final
Draft
Mimi Pollard

Spencer 66-35.7

Mr. Forrest Cooper
State Highway Engineer
Salem, Oregon

Original signed by
A. W. Parsons
Div. Engineer

A. W. Parsons, Division Engineer
Salem, Oregon

Oregon Project I-405-8(4)303
Fremont Bridge Section
Right of Way

Please refer to Federal-aid Engineer J. W. Nash's letter of September 23, 1963 requesting our approval and authorization for the State to acquire right of way on the above mentioned project. Originally you programmed the total estimated cost of right of way, $1,936,000, based upon the 104(b)5 estimate. Inasmuch as the bridge location has been moved since the time that this estimate was made, we request that a new estimate of the right of way cost be made and an appropriate program revision submitted.

We also wish to call to your attention that the original program did not include relocation payments or relocation advisory assistance. There are a number of industrial properties that will be eligible for relocation payments on this project.

As soon as we receive the required estimate and program changes, if desired, we will take early action on authorizing right of way acquisition.

NOTED
LLOYD P. SHAW

original To Young
9-30-63

RECEIVED
SEP 27 1963
OFFICE OF
STATE HIGHWAY ENGINEER

MONTHLY TRANSACTION NO.

DATE SUBMITTED TO W.O.

FORM PR-9 (REV. 4-61)

REQUEST FOR A[PPROVAL]
OF INDIVIDUAL PROJECT[S]
(PPM 21-1 AN[D])

CARD 2	REPORT NUMBER (19) (20)	PROJECT LOCATION (45 typewriter spaces) I-405 Fremont St. to Fremont Br. 21 65	ADT	31,000	FUTURE 66,000 (66) (70)	YEAR 75 (71) (72)	

CARD 3	CHARACTER OF PROPOSED WORK (35 spaces) Right of Way 28 62	NATL. FOREST (63) (65)	FOR MISCELLANEOUS FUNDS ONLY: FH ROUTE NO. (66) (68)	SUPV AGCY 69	DA CLASSIF. 70	DA AREA 71	EMERG. YR. 72 73	PL AUTH YR 74 75

CARD 4	CLASS OF FEDERAL FUNDS [1] Interstate	COUNTY NAME Mult[nomah]
	NAME OF URBAN AREA (17-31) Portland	F.A. SYSTEM Interstate

CARD 5	LINE NO.	CHNG CODE	PROJECT COUNT	WORK CL	WORK TYPE (43 - 48)	STEP (53)	STATUS	ITEM NUMBER	PROJECT NUMBER	TERMINI	MILES (54) (58)	TOTAL COST (59) (66)
1	(1-15)	16	41	42								
5					PE ROW CONST		ITEM AS NOW PROGRAMED	35-D	I-405-8(4) 303	I-405 Fremont St.- Fremont Br.		1,934,000 (25,000,000)
										PROJECT TOTAL	0.80	1,934,000
5					PE ROW CONST		REQUESTED REVISION	35-D	I-405-8(4) 303	I-405 Fremont St.- Fremont Br. (Fremont Bridge Section)		1,000,000 (25,000,000)
										PROJECT TOTAL	0.80	1,000,000

CARD 1	A form PR-1 or PR-9 has been submitted within the last 7 days. Yes ☐	PROJECT WITHDRAWN YES ☐	REASON FOR CHANGE: To include in proposed work re[quest] $26,000. Also revise project cost to reflect
1	COLUMN 14 ⟶ CODE 11	CODE 2	

NOTE: Projects splitting into two or more projects. Prepare a form PR-1 for all new projects resulting from such action.

DATE OF INITIAL APPROVAL: May 14, 1957	PROGRAM REVISION REQUESTED	RECOMMENDED
OTHER: February 27, 1962	DATE: October 28, 1963	DATE
	SIGNATURE	SIGNATURE
	[redacted] ENGINEER: Office	TITLE

[1] If revision includes transfer from one class of project to another, or covers joint financing, show both classes of funds involved.

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE AFTER 7-1-61

Budget Bureau No. 41-R2068; Approval Expires February 28, 1966

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

REQUEST FOR APPROVAL OF INDIVIDUAL PROJECT PROGRAM CHANGE (PPM 21-1 AND 22-1)

			FUTURE	YEAR	REGION	STATE NAME	STATE CODE	APPR. CODE	ITEM NO.
	ADT	31,000	66,000	75	08	Oregon	35	042	35-D
65			(66) (70)	(71) (72)	(74) (75)		(2) (3)	4 6	(14) (18)

FOR MISCELLANEOUS FUNDS ONLY					PROJECT NUMBER		I PROJECTS ONLY	
UPV AGCY	DA CLASSIF.	DA AREA	EMERG. YR.	PL AUTH YR.	PREFIX LETTER(S)	NUMBER-AGR. NO.	POST MI.	DESIG.
69	70	71	72 73	74 75	14 23	I- 405-8(4) 7 18	MI 303 (24) (26)	27

	COUNTY NAME	CODE
	Multnomah	051 (14) (16)

SYSTEM	RTE NO.	FEDERAL AID	STATE	U.S.
Interstate		I-405 (32)	61 (36) (37)	I-405 (41)

TERMINI	MILES	PROJECT COST			CHARACTER OF PROPOSED WORK
		TOTAL COST	FEDERAL FUNDS	STATE FUNDS	
	(54) (58)	(59) (66)	(67) (76)		
405 Fremont St.-Fremont Br.		1,934,000 (25,000,000)	1,740,000	194,000	ROW (Future gr., dr., 6-12' lanes high-type pave. 10' shoulders, 16' median, strs.-see tech. report 59-3).
PROJECT TOTAL	0.80	1,934,000	1,740,000	194,000	
405 Fremont St.-Fremont Br. (Fremont Bridge Section)		1,000,000 (25,000,000) (16) (23)	900,000 (24) (33)	100,000	ROW incl. displaced businesses. (Future gr., dr., 6-12' lanes high-type pave., 10' shoulders, 16' median, strs.-see tech. report 59-3).
PROJECT TOTAL	0.80	1,000,000	900,000	100,000	

REASON FOR CHANGE: To include in proposed work relocation costs of 16 displaced businesses in amount 16,000. Also revise project cost to reflect later and more complete cost data.

N REQUESTED	RECOMMENDED	APPROVED
963	DATE	DATE
	SIGNATURE	SIGNATURE
	TITLE	TITLE

both classes of funds involved.

USCOMM-DC 48018-P61

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OCT 1 1963
FOR FILING

I-405-8(17)303

7676

477 Cottage Street, N. E.
Salem, Oregon 97301

September 24, 1963

Mr. Forrest Cooper
State Highway Engineer
Salem, Oregon

Original signed by
A. W. Parsons
Div. Engineer

A. W. Parsons
Division Engineer
Salem, Oregon

08-25.7

Oregon Project I-405-8(3)332, Fremont Bridge - 14th Ave. Section
Right of Way

This supplements our letter of September 28, 1962 on the Federal-aid Interstate Program wherein you were authorized to proceed with the balance of right of way acquisition for the subject project under certain controlling conditions.

The preliminary layout of the West Fremont Interchange was approved by this office on August 16, 1963. With specific reference to paragraph (2) of the controlling conditions, the participating limits of Interstate funds for the Thurman - Vaughn Streets ramps have now been established at the 21st Street tangent point.

RECEIVED
SEP 25 1963
OFFICE
STATE HIGHWAY ENGR.

original to Young
10-1-63

NOTED
LLOYD P. SHAW

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SEP 12 1963
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James W. Goodsell
Chairman
Robert J. Rickett
Vice-Chairman
H. S. Gosser
Raymond M. Kell
Homer T. Shaver
Marshall N. Dana
Honorary Lifetime Commissioner

GENERAL MANAGER
Thomas P. Guerin

Operated by The Commission of Public Docks

PORTLAND PUBLIC DOCKS

5910 N.W. FRONT AVENUE • PORTLAND 10, OREGON
CAPITOL 3-6231 • TWX 503-224-1982
CABLE ADDRESS: "DOCOM" • CODE: BENTLEY'S COMPLETE PHRASE

I-405-8(1)363
7276

September 10, 1963

Mr. P. M. Stephenson
Asst. State Highway Engineer
State Highway Department
Salem 10, Oregon

Dear Sir:

We are pleased to refer to your letter of July 26 addressed to Mr. William A. Bowes, a copy of which was forwarded to Mr. Thomas P. Guerin, Manager, The Commission of Public Docks.

This matter was submitted to The Commission of Public Docks at its regular meeting on September 5. The Commission has approved the matter of clearances and pier locations as discussed in the general meeting of July 19 at The Port of Portland office building. The action was taken with the request that the State Highway Department furnish The Commission of Public Docks with adequate prior notice of exploratory or construction work and coordinate such work with vessel and terminal operations. This contingency refers specifically to the exploratory and construction work on the two pier locations on the west bank of the Willamette River.

Very truly yours,

E. H. Smith
Assistant Secretary
and Controller

NOTED
P. M. STEPHENSON

EHS/pb

cc: Mr. Thomas P. Guerin
Mr. William A. Bowes
cc Ivan Merchant 9-11-63 er

RECEIVED
SEP 11 1963
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
SEP 11 1963
OREGON
STATE HIGHWAY COMMISSION

RECEIVED
JUL 29 1963
FOR FILING

Capt
Projects
Trans-Portland
Fremont Br.

July 26, 1963

Mr. William A. Bowes
Commissioner of Public Works
City of Portland
City Hall
Portland, Oregon

Dear Sir:

Attached are copies of the pier layout and grade line of the proposed Willamette River Bridge known as the Fremont Bridge. These plans show the vertical and horizontal clearances and the location of the piers.

Will you kindly submit these to the Commission of Public Docks for consideration and comment.

At a meeting held in the Port of Portland Office Building on July 19, 1963, the matter of clearances and pier locations was discussed with representatives of the Port of Portland and the navigation interests in the Portland area. At this meeting, two representatives of the Commission of Public Docks, Mr. R. H. Jones and Mr. S. A. Smith, were present. These gentlemen are familiar with the discussions held at the meeting.

As soon as the approval of the Commission of Public Docks has been received, we will proceed with the formal application to the Corps of Engineers and to the Port of Portland for the permit to construct the bridge.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

P. M. Stephenson
Assistant State Highway Engineer

PMS:er

Attachment

cc Forrest Cooper

RECEIVED
SEP 6 1963
FOR FILING

I-405-8(17)303
7276

Mr Paxson

THE PORT OF PORTLAND
SWAN ISLAND
PORTLAND, OREGON

FREMONT BRIDGE MEETING
PORT OFFICE BUILDING
August 28, 1963

NOTED
G. S. PAXSON

Upon the request of Mr. P. M. Stephenson, assistant state highway engineer, The Port of Portland called this meeting to further discuss the Fremont Bridge pier protection requested by the Pilots at the July 19, 1963, meeting. A list of persons and organizations attending is attached hereto.

The Port of Portland opened with a short explanation of the purpose of the meeting which was then turned over to Mr. Stephenson.

Mr. Stephenson brought up the request by the Pilots at the July 19, 1963, meeting for some type of protective cushion on the river piers, asking what would be required. The use of 6 x 6 and 12 x 12 timbers similar to Morrison Bridge was suggested by Mr. Olsen. Mr. Paxson brought up the question of required area. for the sheathing to cover. Mr. Olsen suggested 6 x 6 horizontal timbers between elevation 0.0 and 25 or 30 (Columbia River datum).

After further discussion, Mr. Merchant proposed 6 x 6 vertical timbers at about 4'-0" centers bolted to the pier with 6 x 6 horizontal timbers at about 10" centers boat spiked to the vertical timbers between elevation 0.0 and 30. This timber protection would be placed only on the harbor line side of each river pier and would therefore reduce the 151' and 154' horizontal clearance (between the harbor line and the river pier) to 150' and 153', respectively. Mr. Stephenson asked if this would be acceptable and no objection was raised.

Mr. Paxson asked if they should expect any conflict with river traffic during test boring at the pier locations. It was suggested that the OSHD contact Mr. Smith of the Dock Commission prior to starting as he would have the ship schedules.

There being no further objections or questions, the meeting was adjourned.

The matter of future dredging adjacent to the piers and in the center of the river was discussed by Messrs. Merchant, Heineman, Olsen, and Neumeister. It was agreed by all that provisions should be made for a 42 foot depth (Columbia River 0.0) between harbor lines and for a 50 foot depth (Columbia River 0.0) for the center 300' width of the 650' river span. This is to allow future deep draft passage to upstream berths.

Dear
RFD/ms
8/29/63

cc: P.O.P. Commission
W. S. Dirker
All attending meeting.

R. A. Neumeister

RECEIVED
SEP 5 1963
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
SEP - 5 1963
OREGON
STATE HIGHWAY COMMISSION

THE PORT OF PORTLAND
SWAN ISLAND
PORTLAND, OREGON

FREMONT BRIDGE MEETING
PORT OFFICE BUILDING
August 28, 1963

The following persons were in attendance at the informal Fremont Bridge meeting held at the Port office building on August 28, 1963.

Mr. J. E. Olsen	Columbia River Pilots
Mr. L. M. Thompson	Portland Steamship Operators & Western Transportation Company
Mr. F. O. Meyer	Knappton Towboat Company
Mr. C. A. Smith	Commission of Public Docks
Mr. H. M. Anundson	Commission of Public Docks
Mr. A. J. Heineman	The Port of Portland
Mr. Ivan Merchant	Oregon State Highway Department
Mr. P. M. Stephenson	Oregon State Highway Department
Mr. G.S. Paxson	Oregon State Highway Department
Mr. R. A. Neumeister	The Port of Portland
Mr. R F. Dow	The Port of Portland

Dow
RFD/ms
8/29/63

FORM B-50 SOM 11-61 40000

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

August 20, 1963

SUBJECT: Marquam Bridge - Bridge No. 8328
Fremont Bridge

To: Mr. Forrest Cooper
State Highway Engineer
O F F I C E

As requested by you I am attaching two prints of our Drawing No. 18951 indicating the plan and elevation of the Marquam Bridge. This drawing is a work drawing and is the plan and elevation drawing of the contract plans. The sketch reproduced in the Portland newspapers was made from the elevation indicated on this drawing by blocking out dimensions and certain other portions of the structure to give just the bare outline of the bridge elevation.

The Marquam Bridge river crossing is the connecting link between the East Bank Freeway on the east side of the Willamette River and the Baldock Freeway on the west side of the river. The lower roadway is approximately 90' above the average ground level on either river bank with the upper grade parallel and 34' above the lower grade. The 34' is necessary to provide for vertical clearance, a 6' allowance for directional signing, and the structural depth of the top deck. The structure carries eight lanes of traffic, four lanes westbound on the lower deck and four lanes eastbound on the upper deck with each of the four-lane roadways splaying out into separate two lane roadways at the ends of the truss spans.

The truss spans were dictated by navigational clearances as are the vertical clearances above low water. The span lengths and the two roadway levels had a very great influence on the type of structure as it was not possible to continue the use of steel girders across the river spans because of the lengths involved and the great depths which would be required for the structural depth. The continuous deck truss type of structure with curved bottom chords at the intermediate piers is a recognized type of construction for spans of this magnitude and lends itself very well to the two-roadway level requirements.

For all structures having costs of over $250,000 a preliminary submission of bridge types, pier types, etc. with costs, must be supplied the Bureau of Public Roads for their preliminary approval. At this stage of development of a bridge project costing over one quarter million dollars, very close liaison is maintained with the Bureau of Public Roads Bridge Engineers as the costs for any type of structure must be justified in the preliminary submission to the Bureau of Public Roads.

The type of structure used at the Marquam Bridge is the most economical and fits the approach system which of necessity because of horizontal alignment is composed of comparatively short steel beam spans.

Two prints of our Drawing No. 18915 is also attached. This drawing indicates horizontal and vertical clearances and the proposed type of structure to be used for the main river crossing of the Fremont Bridge. The elevation indicates only the structure type in the vicinity of the main river crossing. Westerly from Station 368+50 the approach would consist of steel beam spans made necessary because of the horizontal alignment. Easterly from that shown in the elevation one or possibly two simple span deck trusses will be used to cross the throat of the Union Pacific freight yards with the balance of the approach being steel girder spans for the various legs of the interchange.

Please advise if there is anything further that you require on these structures at this time.

Ivan D. Merchant
Bridge Engineer

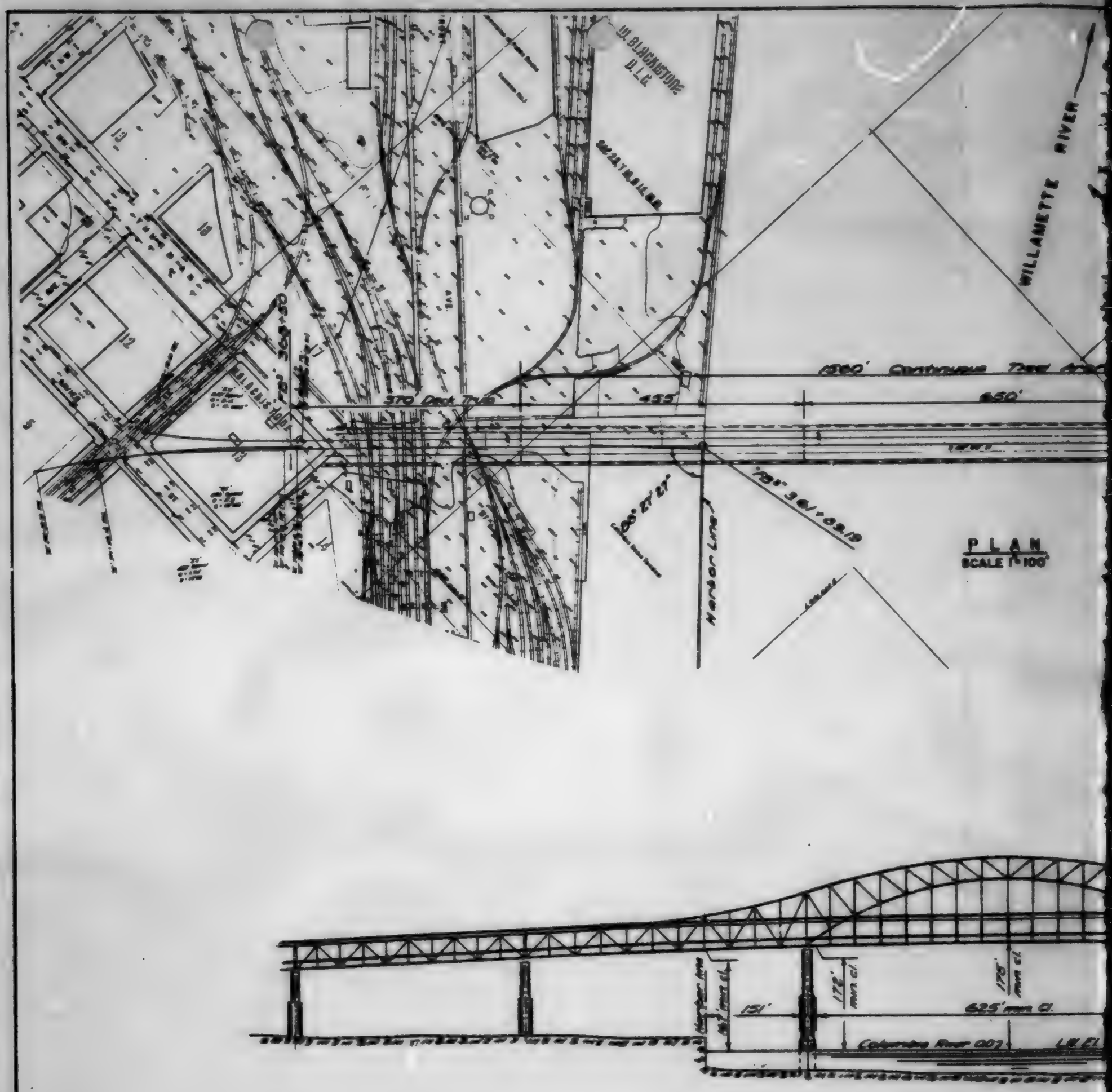
IDM/mm

Attached

P. S. An artist's rendering of the proposed Fremont Bridge is now nearing completion. It is anticipated that this drawing will be completed Thursday of this week. Prints will be handed to you as soon as possible.

IDM.

RECEIVED
AUG 20 1963
OFFICE OF
STATE HIGHWAY ENGINEER


W. BLACKSTONE D.L.C.
WILLAMETTE RIVER
1360' Centerline Tower
370' Deck Truss
455'
650'
Wallace's Addition
Meridian Line
PLAN
SCALE 1"=100'
125'
625' span Cl.
Columbia River 0.0'
L.W. El.
ELEVATION
SCALE 1"=100'
Columbia River 0.0'
M.S.L.
City of Portland
RIVER DATUMS

WILLAMETTE RIVER

Third Street

451'

N 32°28'30" E

178°-552'-08" RD

Harbor Line

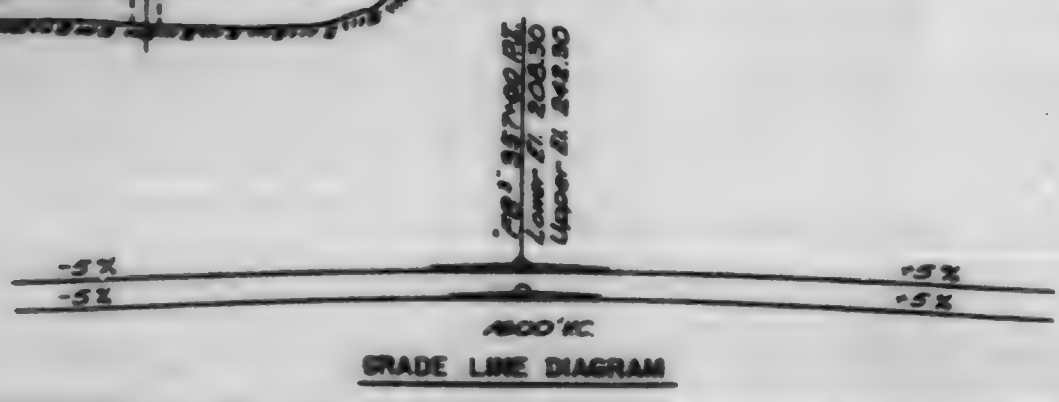
PACIFIC TEL. & TEL. CO.

SUBSTATION

BARBOLTA

N
1"=100'

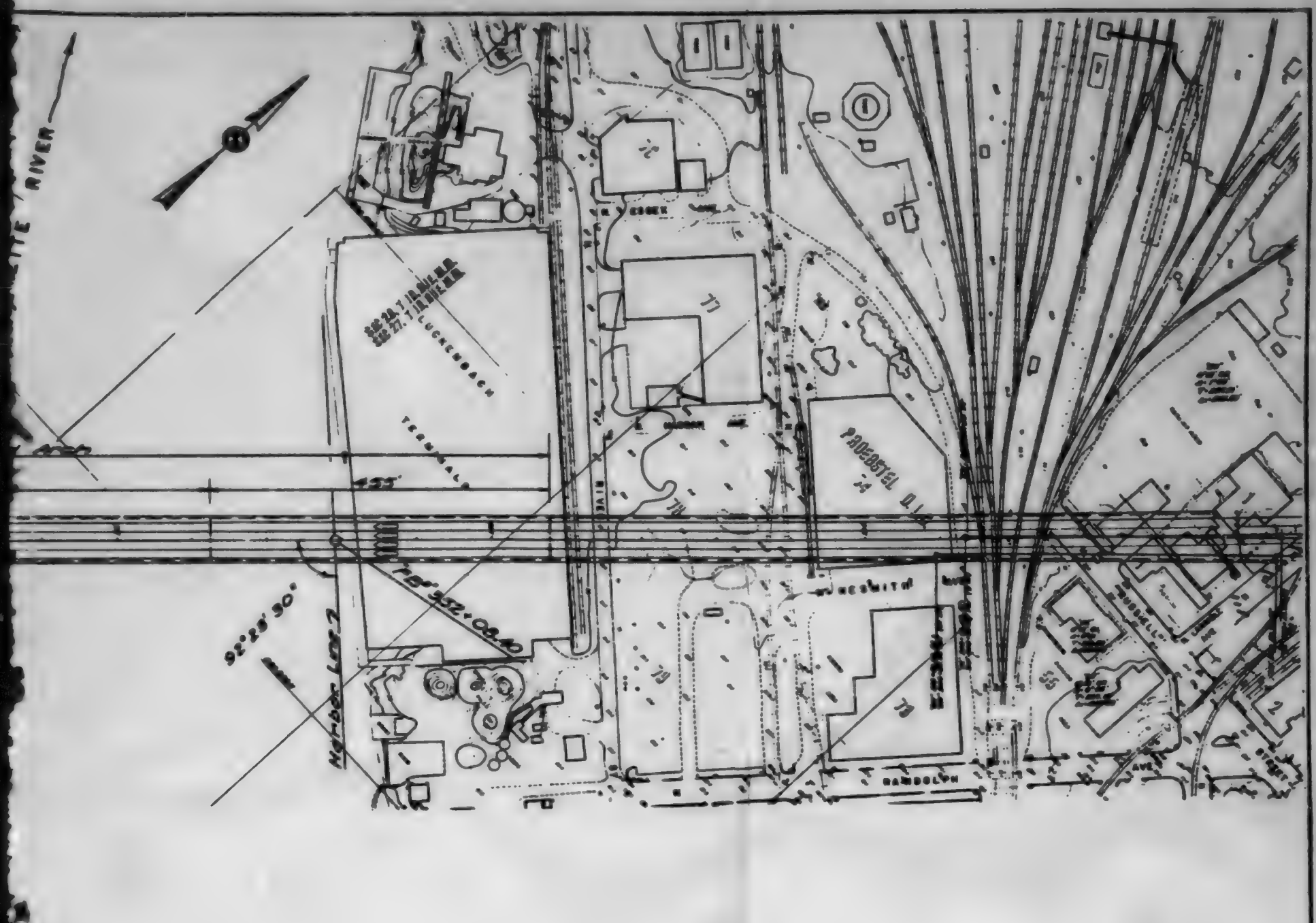
ATION
1"=100'



GRADE LINE DIAGRAM

NOTE
THE SCALE OF THIS PRINT IS ½ THAT OF THE ORIGINAL DRAWING.
FOR EXAMPLE:
INDICATED SCALE 1"=1'-0"
SHOULD BE READ 1/2"=1'-0".
INDICATED SCALE 1/4"=1'-0"
SHOULD BE READ 1/8"=1'-0".

OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION
FREMONT BRIDGE
CONTINUOUS TIED ARCH TRUSS
STADIUM FREEWAY
MULTNOMAH COUNTY
DRAWN [illegible] CHECKED [illegible] DATE [illegible]
DRAWING NO. 18915



GRADE LINE DIAGRAM

NOTE
THE SCALE OF THIS PRINT IS ½ THAT OF THE ORIGINAL DRAWING. FOR EXAMPLE:
INDICATED SCALE 1"=1'-0" SHOULD BE READ ½"=1'-0".
INDICATED SCALE 1/4"=1'-0" SHOULD BE READ 1/8"=1'-0".

OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

FREMONT BRIDGE
CONTINUOUS TIED ARCH TRUSS
STADIUM FREEWAY
MULTNOMAH COUNTY

DESIGNED BY [illegible] DRAWING NO. 2333
CHECKED
DRAWN BDE SUPERSEDES DRG. NO. 18915

THE PORT OF PORTLAND

RECEIVED
JUL 29 1963
FOR FILING
I-405-8(17) 303
7276

RAH:GHB

July 19, 1963

Colonel S. K. Kisiminger
District Engineer
U. S. Army Engineer District,
Portland
628 Pittock Block
Portland 5, Oregon

Dear Colonel Kisiminger:

Enclosed is a review of a meeting held on July 19, 1963, in the Port Office Building at the request of the Oregon State Highway Department for the benefit of all local navigational interests, concerning the new Fremont Bridge.

The proposed alignment had been discussed individually with most of the parties concerned prior to the July 19 meeting. Therefore, the Highway Department's proposed plan submitted at this meeting had been revised to incorporate the earlier suggestions and, consequently, was given unanimous approval by all parties in attendance.

One area of discussion involved possible future channel dredging during the life of this structure and The Port suggested that the Highway Department should plan on a 50-foot dredged depth, to which they will make an additional contingency allowance.

This matter is being brought to your attention at this time so that you may be informed of the progress being made. Although this was an informal meeting of the local interests, it is felt that the groundwork is now well in hand for future processing. It is our understanding that the Highway Department will now proceed with the formal plans for the bridge, followed by formal submission of said plans to the War Department through your office.

Sincerely,

GEORGE M. BALDWIN
General Manager

Enclosure

cc: Mr. P. M. Stephenson, Oregon State Highway Department

RECEIVED
JUL 29 1963
STATE HIGHWAY COMMISSION

NOTED
P. M. STEPHENSON

THE PORT OF PORTLAND
SWAN ISLAND
PORTLAND, OREGON

FREMONT BRIDGE MEETING
PORT OFFICE BUILDING
JULY 19, 1963

Upon the request of Mr. P. M. Stephenson, assistant state highway engineer, The Port of Portland called this meeting of navigational interests in the Portland area, concerning the Highway Department's new proposed plan for the Fremont Bridge. A list of persons and organizations attending is attached hereto.

The Port of Portland welcomed the representatives in attendance and stated that this informal meeting was being held with the local navigational interests to discuss the Highway Department's proposed plan for the new Fremont Bridge. The meeting was turned over to Mr. Stephenson, who explained the proposed plan.

Mr. Stephenson pointed out that the type of bridge was not yet determined, as it was necessary that the alignment and location of the piers be established first. He explained that if the proposed plan was acceptable to the parties in attendance that the Highway Department would then select the type of structure and proceed with actual design of the bridge. This would be followed by formal submission to The Port of Portland and the War Department for the formal permits.

Two questions were raised by the Dock Commission representatives, the first concerning ship operations between the west pier and the harbor line in connection with use of the Dock Commission's heavy lift shear leg and the second question concerning the vertical clearance of 167 feet at the harbor line in connection with the shear leg operation. Answers by the Pilots and others satisfied the Dock Commission's questions.

The matter of future dredging adjacent to the piers was discussed, and it was agreed that a dredged depth of at least 50 feet should be planned on in the pier design. Mr. Stephenson added that the design would probably allow an additional contingency in this regard.

Mr. Stephenson stated that the widths of the piers would not exceed the 25 feet indicated on the plan and would be parallel to the centerline of the river. The Pilots requested protective dolphins around the piers, especially the one on the west side of the river, that would probably come into use in connection with maneuvering under the Dock Commission's shear leg. Mr. Stephenson stated that the bridge piers would be adequately protected.

There being no objections to the state's proposed pier scheme and only favorable remarks concerning the consideration given local navigational interests by the Highway Department, the meeting was adjourned.

RAN:mh
7/19/63

THE PORT OF PORTLAND
SWAN ISLAND
PORTLAND, OREGON

July 19, 1963

The following persons were in attendance at the informal Fremont Bridge hearing held at the Port Office Building on July 19, 1963:

Captain J. W. Powell	Columbia River Pilots
Captain Lloyd A. Bell	Columbia River Pilots
Captain H. T. Shaver	Portland Steamship Operators
Mr. Paul W. Light	Pacific Inland Navigation Company
Mr. K. B. Woodman	Portland Steamship Operators
Mr. L. M. Thompson	Western Transportation Company
Mr. F. O. Meyer	Knappton Towboat Company
Mr. R. H. Janes	Commission of Public Docks
Mr. C. A. Smith	Commission of Public Docks
Mr. Vello Kiisk	The Port of Portland
Mr. A. J. Heineman	The Port of Portland
Mr. P. M. Stephenson	Oregon State Highway Department
Mr. G. M. Baldwin	The Port of Portland
Mr. R. A. Neumeister	The Port of Portland
Mr. D. Porter	The Port of Portland

RAN:mh
7/19/63

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JUN 18 1963
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COMMISSIONERS
GLENN L. JACKSON, CHAIRMAN
MEDFORD
KENNETH N. FRIDLEY, MEMBER
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND
FLOYD QUERY, SECRETARY
SALEM

I-405-8(17)303
72.76—

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 10

June 17, 1963

Union Pacific Railroad Company
2525 N. Kerrabee Avenue
Portland 17, Oregon

Attention: Mr. G. H. Baker
Superintendent

Gentlemen:

Re: Fremont Bridge Alignment
Bridge No. 2529

Under separate cover, I am sending you four prints of 1" equals 50 scale map indicating the alignment of the Fremont Bridge between approximately Interstate Avenue on the East side and Front Avenue on the West side. This alignment was requested by you when I was in your office recently.

Span arrangements have not been determined at this time. A tentative grade line would indicate that there would be on the order of 100' of vertical clearance across your Albina Yards. At such time as span arrangements have been determined you will be furnished a plan and elevation of the structure and approach maps.

Very truly yours,

Ivan D. Marchant
Bridge Engineer

IDM/ma

cc: Mr. R. H. Brown
Mr. P. M. Stephenson

NOTED
P. M. STEPHENSON

RECEIVED
JUN 17 1963
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUN 7 - 1963
FOR FILING

FORM S-20 SOM 11-61 40220

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

I-405-8(17)303
7276

Salem, Oregon
June 5, 1963

SUBJECT: Stadium Freeway

To: Mr. G. S. Paxson
Deputy State Highway Engineer, Retired
Room 138
Building

A couple of days ago, you requested me to examine the Stadium Freeway Agreement with the City of Portland and the City of Portland's Charter with respect to the Dock Commission, to determine whether or not the Dock Commission could object to some of our clearances for the Fremont Bridge. The above-mentioned City of Portland Agreement was entered into on April 13, 1962, and included on Exhibit "A" the Fremont Bridge, together with the interchanges on both the east and west bank of the Willamette River.

Under the City Charter, the Dock Commission consists of five members appointed by the Mayor. Section 6-103(g) gives the Commission power to adopt rules and regulations and further provides:

> " * * *except as provided by the general rules of the Commission no new structures or repairs upon or along the said water front shall be undertaken, except upon application to the Commission and under permit by it * * *"

With respect to the Dock Commission, the City Charter under Section 6-103(i) further provides:

> "The power and authority over that part of the streets of the City of Portland which abut upon or intersect its navigable waters, lying between the harbor line and the first intersecting street, measuring backward from highwater mark, is hereby conferred upon and vested in the docks commission to the extent only that may be necessary or requisite in carrying out the powers else where vested in it by this act; * * *"

Copy to:
Merchant
Litchfield
L. H. Young

NOTED
G. S. PAXSON

To the best of my knowledge, the Dock Commission has no general rules or regulations which exempt the Highway Commission from building structures within the area under their jurisdiction without proper application and permit. At least we were required to obtain the same on the Clay Street and Eastbank projects.

The above-mentioned Stadium Freeway Agreement with the City of Portland has attached an Exhibit "A" which is merely a general map showing the location of the Freeway according to the survey, the street closures, and the various construction work to be undertaken by State. It also includes those portions of the project to be turned over to the City after completion. The Agreement provides that the final construction plans shall be approved both by the City and the State.

However, paragraph 8. under THINGS TO BE DONE BY CITY provides as follows:

> "In the event that any portion of said project, including construction of piers, bridges, bridge ramps, fills, or any other part of the construction work necessary for said project, lies within an area under the jurisdiction and control of the Commission of Public Docks, as provided in the Portland City Charter, City shall obtain from said Commission a resolution or ordinance of consent to the plans, terms and provisions of this agreement as well as to any modifications or supplements to the same, including the final construction plans that are to be agreed upon between the City and State as provided in paragraph 3 of the RECITALS to this agreement."

This paragraph was inserted following our difficulties with the Dock Commission on the Eastbank Freeway. Our interpretation of the same is to the effect that the City will obtain the necessary ordinance or permission from the Dock Commission for the final plans before they are approved by the City. In other words, any complaints the Dock Commission may have to the clearances on the final plans will have to be made to and ironed out by the City rather than the State. Our plans could only be blocked by failure of the City to agree to the same as above-mentioned.

While I am not personally acquainted with the politics in Portland, it would appear to me that since the Mayor appoints the Dock Commission it should be the Mayor and the City Council that prevail in the event of an argument between the two bodies.

If I can be of any further service on this matter do not hesitate to contact me.

Frank C. McKinney

FRANK C. McKINNEY
Chief, Office Section

FCMcK:jr

cc: L. I. Lindas
G. E. Rohde
W. T. Wright

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JUN 6 1963
OFFICE OF
STATE HIGHWAY ENGINEER

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THE PORT OF PORTLAND
JUN 24 1963
FOR FILING

I-405-8(17)303
[illegible]
L 7276

May 29, 1963

SUBJECT: Fremont Bridge

Mr. Merchant and Mr. Glen Paxson of the State Highway Department met with Mr. Neumeister and me relative to the new Fremont Bridge heights and widths. We will have to have a hearing on this matter when we receive the formal papers. In the meantime they will discuss the matter with Captain Shaver who is intimately interested for the steamship operators and for the tugboat operators.

When we have the hearing, we should also be sure that John Olson of the Pilots is properly notified and George Stevens of the Steamship Operators. I do not know who else of the water side will be interested, but I am sure that those people having lands affected will be interested.

The present plan calls for a ramp to come down at 21st and Fremont, and I think the Dock Commission are particularly concerned with the entrance to Front Avenue. Railroads will also be concerned with clearances, and although these will probably be handled beforehand we should check to be sure at the time of the hearing.

JJM:br

bcc: Mr. Glen Paxson
Deputy State Highway Engineer

TO: MR. GEORGE M. BALDWIN

NOTED
G. S. PAXSON

RECEIVED
JUN 3 1963
OFFICE OF
STATE HIGHWAY ENGINEER

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JUN - 3 1963
OREGON
STATE HIGHWAY COMMISSION

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COMMISSIONERS
GLENN L. JACKSON, CHAIRMAN
MEDFORD
KENNETH H. FRIDLEY, MEMBER
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND
FLOYD QUERY, SECRETARY
SALEM

T-1105-8(17)303
7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
Portland 13

FORREST COOPER
STATE HIGHWAY ENGINEER
G. S. PAXSON
DEPUTY STATE HWY. ENGR.
LEONARD I. LINDAS
CHIEF COUNSEL

April 2, 1963

Commissioner William A. Bowes
Commissioner of Public Works
CITY OF PORTLAND
City Hall
Portland 4, Oregon

Dear Commissioner Bowes:

Bridge Engineer Ivan D. Merchant informs me that the design and access problems that would be created by installing water mains on an Interstate Bridge make it necessary for the State to continue the existing policy set forth in Mr. Paxson's letter of January 19, 1960.

Please inform Mr. Grayson that his proposal to install two 36-inch water mains on the Fremont Bridge must be denied.

Very truly yours,

Original Approved by F. B. Klabee
F. B. Klabee
Metropolitan Engineer

FBK:sh

cc: Mr. Lloyd P. Shaw
Mr. Ivan D. Merchant
Mr. F. D. Morgan

LLOYD P. SHAW

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APR 3 1963
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAR 20 1963
FOR FILING

I-405-8(17)303

7276

477 Cottage Street N.E.
Salem, Oregon

March 14, 1963

Mr. Forrest Cooper
State Highway Engineer
Salem, Oregon

08-23.2-0

A. W. Parmont, Division Engineer
Salem, Oregon

Oregon Project I-405-8(4)303
Fremont Bridge Section, Right-of-Way

Mr. Young's March 6, 1963 letter requested authorization to proceed with right-of-way acquisition in connection with the subject project.

It is our understanding that the location as shown on the right-of-way map you furnished is being revised. Consequently, further authorization is not being issued by this office.

RECEIVED
MAR 15 1963
OFFICE OF
STATE HIGHWAY ENGINEER

original To Morgan
Copy To Young
3-20-63

NOTED
LLOYD P. SHAW

RECEIVED
FEB 19 1963
FOR FILING

I-405-8(17)303
7276

February 19, 1963

1343

Portland Public Docks
3070 N. W. Front Avenue
Portland 10, Oregon

Attention Mr. Thomas F. Guerin, General Manager

Dear Sirs

Re: Fremont Bridge location

Your letter of February 4 requests a copy of a plan indicating the location of the proposed Fremont Bridge across the Willamette River.

A final paper location of the bridge center line is now in the process of being made. As soon as the paper location is made, this line will be located in the field, and at that time we will be very pleased to send you a print showing the location.

For your information, the center line on the west side of the river is tentatively located approximately 108 feet upstream from your fixed derrick, which point is approximately 45 feet upstream from your property line. The above-mentioned dimensions are subject to minor changes upon being located in the field.

At this time no spans or pier locations have been determined; therefore, it will be impossible for us to give you specific pier locations. Survey and design work on this structure will be started in the very near future and when span arrangements, pier locations, et cetera, have been determined you will be informed.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

P. H. Stephenson
Assistant State Highway Engineer

cc Mr. Forrest Cooper
Mr. Ivan Merchant
Mr. F. D. Morgan

IDM:al:er

COMMISSIONERS
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Chairman
Robert J. Rickett
Vice-Chairman
H. B. Cooper
Raymond M. Kell
Homer T. Shaver
Marshall N. Dana
Honorary Lifetime
Commissioner

GENERAL MANAGER
Thomas P. Guerin

Operated by The
Commission of
Public Docks

STEPHENSON

PORTLAND PUBLIC DOCKS

3070 N.W. FRONT AVENUE • PORTLAND 10, OREGON
CAPITOL 8-8231 • TWX 503-224-1982
CABLE ADDRESS: "DOCOM" • CODE: BENTLEY'S COMPLETE PHRASE

February 4, 1963

Mr. Forrest Cooper
Chief Engineer
Oregon State Highway Department
Salem 10, Oregon

Dear Mr. Cooper:

This is to request some information.

Would you please let us have at your earliest convenience a copy of your most recent location plan for the proposed Fremont bridge across the Willamette river in Portland?

We are particularly interested in your proposed location of bridge piers on each side of the river, and would deeply appreciate complete and specific details upon these pier locations.

Your early attention to this matter would be considered a courtesy.

Very truly yours

Thomas P. Guerin
General Manager

TPG:pj

Porter

Copy to FC

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OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
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FEB 18 1963
OFFICE OF
STATE HIGHWAY ENGINEER

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FEB - 5 1963
OREGON
STATE HIGHWAY COMMISSION

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FEB 5 1963
OFFICE OF
STATE HIGHWAY ENGINEER

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OFFICE OF THE MAYOR
MAR 1 1963
CITY HALL

FOR FILING

I-405-8(17)303

7276

TERRY D. SCHRUNK
MAYOR

STEPHENSON

CITY OF PORTLAND
OREGON

February 8, 1963

Mr. Glenn L. Jackson, Chairman
State Highway Commission
Salem, Oregon

Dear Mr. Jackson:

As Mayor of the City of Portland, I am extremely interested in the progress of freeway development in our city. Inasmuch as freeways in any city have a tremendous effect within a community, I would like to discuss with you in this letter one phase of our planned freeway development, namely, the erection of the bridge across the Willamette River now designated as the Fremont Bridge, which will connect the Stadium and Minnesota Freeways. It is my understanding that it is contemplated that the Fremont Bridge will be approximately the same height of the St. Johns Bridge. Because of the great importance of any new bridge across the Willamette River, and because of the required height of the Fremont Bridge to allow for ship passage, I am very much interested in the design features that will be incorporated into the Fremont Bridge plans.

The St. Johns Bridge is considered by many authorities to be one of the finest examples of bridge architectural design in the world, and I think it is incumbent upon us that, in order to complement Portland's beautiful setting, the Fremont Bridge also have the best design characteristics possible, in order that it will not only be a bridge of service, but a bridge of outstanding beauty as well.

I respectfully request that before any design features are finally determined by your staff personnel, the City of Portland have an opportunity to consult with your staff, in order that we may have the fullest opportunity to consider the type of design that will be determined upon for this very important bridge in our city.

As you probably are aware, many cities throughout the world that front a body of water or are divided by a river are identified by their bridges, and certainly it is my hope that the Fremont Bridge will be an identifying mark of which we are all proud.

I will appreciate hearing from you on this matter at your early convenience.

NOTED
P. M. STEPHENSON

Yours truly,

Terry D. Schrunk

MAYOR

Porter / Answered by Jackson C

FEB 11 1963
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
FORREST COOPER

NOTED
R. L. PORTER

RECEIVED
FEB 11 1963
OREGON
STATE HIGHWAY COMMISSION

TDS:lim

cc Commissioner Bowes
cc Forrest Cooper

COPY

RECEIVED
JUL 5 1962
COMMISSIONERS
FOR FILING
KENNETH N. FRIDLEY, MEMBER
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND
FLOYD QUERY, SECRETARY
SALEM
I-405-8(17) 303
7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
5821 N. E. Glisan St.
Portland 13, Oregon

July 2, 1962

FORREST COOPER
STATE HIGHWAY ENGINEER
G. S. PAXSON
DEPUTY STATE HWY. ENGR.
LEONARD I. LINDAS
CHIEF COUNSEL

Mrs. Cornelia F. Welch
9721 S. E. Ankeny
Portland, Oregon

Mr. Clayton R. Welch
c/o Alton Bassett, Attorney
Corbett Bldg.
Portland 4, Oregon

Dear Sir and Madam:

Your letter of recent date addressed to Mr. John K. Scott, Senior Right of Way Agent has been referred to this office for reply.

The property which you describe in your letter located in Lot 2, Block 10, Subdivision of Prochatel's Addition to Albina, is in the path of one of the ramps to the proposed Fremont Bridge. We do not have this project programed at this time and have no funds which can be used on this right of way. It will probably be another two years before right of way can be purchased in this area.

We regret that we cannot assist you in liquidating this property and trust that you may be able to make other arrangements.

Very truly yours,

Lloyd P. Shaw
Metropolitan Engineer

By

A. V. Benedict
Assistant Metropolitan Engineer

AVB/dg
cc: A. D. Newman Co., Realtors
G. S. Paxson
John K. Scott

RECEIVED
JUL 3 - 1962
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUL - 3 1962
OREGON
STATE HIGHWAY COMMISSION

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JUN 1 - 1963
FOR FILING

HEADQUARTERS
THIRTEENTH NAVAL DISTRICT
SEATTLE 15, WASHINGTON

I-405-8(1)303
17276

IN REPLY REFER TO:
Code 31A/ALJ:jd
11220
Serial 220/31A
MAY 21 1963

Mr. Ivan D. Merchant
Bridge Engineer
State Highway Department
State of Oregon
Salem 10, Oregon

Dear Mr. Merchant:

Your letter of 5 April 1963 stated that a clearance of 167' (above mean, low low water) had been established for naval vessels on the Willamette River and that in view of the proposed Fremont Bridge it was necessary to confirm the required clearance.

Previous references to vertical clearance on the Willamette River have been to heights above mean, low low water. It is noted that the latest C&GS Chart No. 6155 (Port of Portland) gives the clearance of the Steel Bridge as 164' above Columbia River Datum (mean lower low water during lowest river stages). The Navy has no requirement for a greater clearance at the Fremont Bridge than presently exists at the Steel Bridge.

In response to your letter of 5 April 1963 the Chief of Naval Operations has established a requirement for a vertical clearance of 164' above Columbia River Datum (mean lower low water during lowest river stages) for the proposed Fremont Bridge.

Sincerely,

J. B. BURROW
Captain, U. S. Navy
Chief of Staff

Copy for P. M. Stephenson
" Roy Torgerson - BPR

NOTED
P. M. STEPHENSON

RECEIVED
MAY 23 1963
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
AM MAY 23 1963 PM
7,8,9,10,11,12,1,2,3,4,5,6

NPPOP-HA-1.4

29 April 1963

Oregon State Highway Department

Salem, Oregon

ATTENTION: Mr. Ivan D. Merchant, Bridge Engineer

Gentlemen:

It is to the advantage of the economy of the country that the clearances of a bridge be such that the total costs to both land transportation and waterway transportation is a minimum, giving due consideration to the future economic development of the affected areas.

In the absence of reasonable projections of waterway or bridge needs and usage over such extended periods, a 20-year period will be applied uniformly to both navigation and bridge aspects.

The range of vertical clearances to be studied should encompass the highest clearance desired by navigation interests and the lowest clearance suggested by bridge interests and should include sufficient intermediate clearances to develop a curve showing the relation of bridge and navigation costs throughout the range. Oregon State Highway Department should supply all cost figures pertaining to a bridge of the design that would be constructed if no navigation existed on the river and for bridges providing the various clearances needed for a complete study.

Please do not hesitate to call on me if you need additional information on this subject.

Very truly yours,

T. W. RAGSDALE
Chief, Operations Division

CHARLES R. CHANDLER
OSHD

SPVJ 26 April 1963

MEMORANDUM FOR: Mr. Clarence W. Todd
Chief, Commercial Statistics
U. S. Army Engineer District, Portland
Portland 5, Oregon

SUBJECT: Waterborne Commerce Statistics - Vessel Crossing Columbia River Bar - 1960

1. Attached is requested copy of alphabetic list of vessels which entered and departed the Columbia River during calendar year 1960.

2. Because of their non-recurring use status the punched cards containing the information reflected on this listing are no longer in file nor is there another listing of this information in this office.

Incl
tabulation

E. ROSS
Chief, Pacific Regional
Statistical Office

RECEIVED
MAR 7 1962
FOR FILING
I-405-8(17)303
7276

Salem, Oregon
March 6, 1962

Mr. P. M. Stephenson

Fremont Bridge - Portland
Stadium Freeway

Some months ago, I asked Mr. Wimm, Manager of The Port of Portland, to advise us as to the clearances which would meet with the Port's approval for the proposed Fremont Bridge over the Willamette River. He never answered me and when he was in this office a few days ago, I asked him again about it.

I have a letter from him, a copy of which is attached, suggesting that we submit to the Port some tentative clearances. If I remember correctly, we have been working on the assumption that a vertical clearance of 167 feet would be adequate for commercial navigation and that the Navy was not interested in this reach of the river for clearances such as it has insisted on at Astoria and Longview.

I would suggest that you submit to Mr. Wimm preliminary sketches showing the clearances which we propose.

G. S. Paxson
Deputy State Highway Engineer

GSP:ms
cc Mr. I. D. Marchant

RECEIVED
MAR 7 1962
FOR FILING
I-405-8(17)3.03
7276

Salem, Oregon
March 6, 1962

Fremont Bridge
I-405 Stadium Freeway

Mr. Walter F. Wright
Right of Way Engineer

OFFICE

Herewith, a copy of program approval from the Bureau of Public Roads advising us that we may proceed with preliminary work in connection with the acquisition of right of way on the subject-named section of highway.

You will note that authorization of actual acquisition is being withheld pending receipt of maps designating limits of the right of way to be acquired.

You will also note that in the last paragraph of the Bureau's letter of approval they have asked for additional information and have commented on possible savings resulting from the taking of right of way of limited vertical dimension. I assume that you will carry on the necessary contacts with the Bureau to keep them advised as the situation develops.

L. H. Young
Office Engineer

LHY:mmb
Att.
cc: Mr. F. D. Morgan

RECEIVED
OCT ... 1960
FOR FILING
I-405-8(17) 303
72.76

October 28, 1960

Mr. John J. Mann, Jr.
General Manager
The Port of Portland
Post Office Box 4099
Portland 8, Oregon

Dear Mr. Mann:

We are studying the so-called Stadium Freeway and the crossing of the Willamette River near the foot of Fremont Street in Portland. While construction is a considerable period in the future, there are a lot of preliminary matters that have to be fairly well established before plans can be made.

One of the most important of these is the navigational clearances, both horizontal and vertical, required at the bridge. I would greatly appreciate your advice as to the minimum clearances that, in your judgment, would reasonably provide for present or future shipping in that portion of the Portland Harbor.

Very truly yours,

W. C. Williams
State Highway Engineer

By

C. S. Paulsen
Assistant State Highway Engineer

CSPaul

cc to: Mr. W. C. Williams
Mr. Tom Edwards
Mr. Ivan D. Merchant

I-405-8(17) Fremont Bridge Section, 1972
303
#7276

CONFIDENTIAL

#7276 Fremont Bridge

DEPARTMENT OF JUSTICE

Memorandum

TO: THE FILE DATE: October 11, 1974

FROM: Pat Randolph, Jr.

A. E. JOHNSON

SUBJECT: ADHESIVE ENGINEERING MEETING WITH MR. GAUL - WEDNESDAY - OCTOBER 2.

On Wednesday, October 2, a meeting was held in Salem among Bob Bothman, Ed Hardt, Walt Hart, Scott Coulter, Al Johnson, myself, various other bridge personnel at various times and Robert Gaul, President of Adhesive Engineering Company. The conversation centered upon the terms of the proposed replacement agreement among Murphy Pacific, Adhesive Engineering, and the State.

Mr. Gaul would like to modify the contract provisions relating to the ("pull out") test requirements. He admitted that it does not appear likely that the asphalt surface on the Fremont Bridge will meet the 200 PSI test specifications. He also admitted that the test specification was developed from information supplied by his company in the first instance.

I indicated that I had advised the State that they would be in a weaker legal position if they accepted a substitute standard which was not as objectively qualifiable as the "pull out" test requirements.

Hardt and Bothman reiterated that they were interested in having a test based upon measurable standards so that there would be no arguments in the future as to whether the surface met the test. Gaul was able to supply no such alternative method of testing at this time.

Gaul requested that the contract be amended to provide that the State would develop a substitute test method within a specified period of time. We indicated that we could not agree to such an amendment but that we would insert language in the contract to the effect that the State would study the question of alternative methods of testing and would establish such a method if one proved feasible. Mr. Gaul requested that I draft such language and I agreed to do so.

Gaul was also concerned about the warranty requirements. Under the main contract, the two-year warranty does not begin running until the contract is "finally accepted". He was concerned that the warranty period would thus be extended far beyond the originally intended period if the issue of the "pull out" test was not resolved.

RECEIVED
STATE HWY ENGR
OCT 11 74
REFER TO
FOR
Info | Invoice | R/D | D/R | Sign | Act | File

I indicated that it was our intent that the warranty period begin running at the time of "conditional final acceptance" as defined in the substitution contract and that I would make the necessary changes in the contract to spell this out more clearly.

Gaul also indicated that he felt the $700,000 bond requirement was too severe. He indicated that his cost in laying the asphalt surface on the bridge in the first place was only about $350,000 to $375,000. I responded that the $700,000 estimate was based upon anticipated costs two years from now and that those costs would include not only the laying down of a new surface but the tearing up of the existing surface. In light of all this we felt the bond requirement was reasonable and would not amend the agreement to change this requirement.

Although the above constitutes the substance of the meeting, there were a number of details discussed which I have collected in hand written notes which I will retain in the file.

PAR:ch;hg

cc - Walt Hart
Ed Hardt
Bob Bothman
Scott Coulter
Al Johnson

#7276 Fremont Bridge

DEPARTMENT OF JUSTICE

Memorandum

TO: TO FILE

DATE: October 8, 1974

FROM: Pat Randolph, Jr.

SUBJECT: ADHESIVE ENGINEERING

A. E. JOHNSON

Today I spoke to Ken Crook, Counsel to Jefferson Corporation, parent company of Adhesive Engineering. Mr. Crook is with Bose, McKinney & Evans, 1100 First Federal Building, Indianapolis, Indiana 46204, his phone number is area code 307-637-5353. Mr. Crook reports that his company acquired Adhesive in July without complete knowledge of the paving problem on the Fremont Bridge. Further, he indicates that he does not feel that Adhesive would be able to obtain a bond in the necessary amount to fulfill contract requirements without Jefferson Corporation also supporting the bond.

Mr. Crook inquired about the possibility of alternate formula for determining acceptability under the substitution contract and also about the amount of the new bond requirement. His questions and my answers tracked very closely the discussion of October 2 with Mr. Gaul.

Mr. Crook asked if I would delay work on the next draft of the contract so that he would make certain suggestions with regard to drafting. I indicated that I would delay this work, but I was concerned that Murphy Pacific be advised that the delay was at the request of Adhesive, since Murphy Pacific has been concerned about further delays in the "finaling out" of their main contract on the Fremont Bridge.

In a subsequent conversation with Walt Hart, we agreed that Walt would communicate the fact of the delay and the reasons for the delay to Jay Murphy.

PAR:ch;hg

cc - Walt Hart
Ed Hardt
Bob Bothman
Scott Coulter
A. E. Johnson

7276

FORM 81.734-3030

OREGON STATE HIGHWAY DIVISION

INTER-OFFICE CORRESPONDENCE

October 22, 1974

Portland, OR 97213

FILE: Case file

FROM: R. N. BOTHMAN
Metropolitan Engineer

SUBJECT: Fremont Bridge
Contract: 7276

NOTED
H. S. COULTER

TO: MEMO TO THE FILE

Mr. Bergman, District Credit Manager of U. S. Steel, contacted me, requesting information as to disposition of the Murphy-Pacific contract for the Fremont Bridge. He wanted, in particular, information relating to transfer of responsibility of the remaining work from Murphy-Pacific to Adhesive Engineering.

I advised him we were in the process, and had proposed to Adhesive Engineering, a contract that would transfer responsibility for the remaining work to Adhesive Engineering.

ebg

cc: H. S. Coulter
P. A. Randolph
John Howard

RECEIVED
OCT 24 1974
Office of
Assistant State Highway Engineer

Geo Zilles c A E Johnson c

JAN 20 1972

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

January 14, 1972
Salem, Oregon

I-5-4(11)-3
11.16

To: Memorandum to the Files

SUBJECT: **CONFIDENTIAL**

Fremont Bridge Superstructure
Contract 7276
Conference with the Contractor-
Murphy Pacific Enterprises on
January 13, 1972

DUE TO POSSIBLE IMPENDING LITIGATION ON THIS PROJECT THE FOLLOWING IS CONSIDERED TO BE PRIVILEGED INFORMATION

A conference was held this date in the small conference room, State Highway Building, Salem, Oregon, regarding the cracked tie girder on the subject project. In attendance representing Murphy Pacific Enterprises, Inc. were Mr. J. Murphy, Mr. L. Tokala, Mr. Don Shupp, and Mr. Wayne Jensen; Representing the Highway Division were Mr. Tom Edwards, Mr. A. E. Johnson, Mr. Robert Ellison, and Mr. Edward Hardt.

Mr. Edwards indicated the State has hired Howard, Needles, Tammen & Bergendoff to check stresses of the original design, has retained M.E.I. for a metallurgical study of the fractured piece, and has requested that Parsons, Brinckerhoff, Quade & Douglas re-analyze their original design. Preliminary reports from these organizations are not available at this time but are expected in a week or so.

Mr. Edwards stated that he felt he couldn't live with a repaired junction piece and that the piece must be taken out and replaced. He asked the Murphy people if they had made any plans for doing this.

Mr. Murphy indicated they were reluctant to make such plans until the reason for the failure was determined and liability established. Mr. Murphy said that they hired Richardson-Gordon to check the erection procedures and their reports are that the erection procedures were satisfactory and within the allowable stresses. He went on to say that they have built a new falsework tower for the east side which has been an added expense. He feels that they should be paid for this falsework when it arrives at Swan Island.

Mr. Edwards indicated that payment for the falsework will be considered after our consultants' preliminary reports are received. He went on to say he understands the contractor's reluctance to plan for repairs prior to the outcome of the various consultants' reports but he wants everybody thinking about the problem now in order that work can proceed immediately upon determination of the reason for the failure.

NOTED
A. E. JOHNSON

Mail file copy
1-19-72

Mr. Tokola was of the opinion that box girders from panel point 0 to panel point 3 may have to be removed in order to modify the sections in question. This procedure will have to be verified with Earl & Wright (Consultants) to determine the stresses on the remaining structure. He was very concerned about the possible necessity of removing panel point 14 if the section from panel point 0 to 3 is removed, as this is a very difficult piece to re-assemble. Mr. Tokola was also concerned about the fact that the hangers at panel point 0 are now in a bind and suggested that Mr. Cunningham be directed to have the contractor raise the structure to alleviate the situation. He also indicated there was some trouble with the initial assembly of the main span at Swan Island due to a skew which exists in the west back span.

Mr. Edwards indicated that he will write a letter authorizing the jacking work necessary to release the hanger bind at panel point 0 and that he expects to give the contractor some guidance as to repair procedures as soon as the consultants' preliminary reports are received.

Mr. Edwards commented on U.S. Steel Corporation requests for access to information resulting from M.E.I.'s investigation. Mr. Edwards considers this privileged information and has refused these requests.

Mr. Murphy indicated that he felt that any communication with U.S. Steel Corporation regarding this project should be directed to his office and Mr. Edwards concurred. Mr. Murphy indicated that he would be in the east next week and will talk with the President of the U.S. Steel Corporation to clarify this point.

ORIGINAL SIGNED
R.W. ELLISON

R. W. Ellison
Bridge Administration Engineer

RWE/ELH/ag

cc: T. Edwards
A. E. Johnson
E. L. Hardt
R. O. Cunningham
W. J. Hart

RECEIVED
JAN 18 1972
OFFICE OF
STATE HIGHWAY ENGINEER

7276 Fremont Br. Superstructure 1973

DEDICATION

#7276 11-16-73

La Grande Observer

Bridge not for people

"People's Day" to celebrate completion of Portland's $82 million Freemont Bridge was a rip-roaring success.

The event, which was the pedestrian's only opportunity to hoof it over the 176-foot high span, drew from 25,000 to 35,000 Portlanders.

They arrived by every form of conveyance, including Tri-Met buses which provided free shuttle service from various points in the city.

The event demonstrated the new public awareness of the Oregon State Highway Division. People obviously liked it. They responded enthusiastically.

The response was so genuine it raises a question: Why wasn't the bridge designed to carry pedestrians as well as gas guzzlers?

Perhaps one reason is the bridge leads from the Eastside only to Portland's dock area. Another might be worry that it would be a popular place from which to jump.

But in this new era of shoe leather and bicycles the omission seems serious.

La Grande planners will be careful to avoid this omission when the new, not quite so high, Second Street Viaduct is designed.

It's Officially—Wheez, Wheez—Open

DRENCHING RAIN AT Thursday opening of Portland's Fremont Bridge failed to dampen enthusiasm of participants, but 1919 Chevrolet "Baby Grand" touring car driven by Carter Helming of Tigard refused to cooperate. Plans were for the car, which carried guests of honor, Frank Branch Riley and Glenn Jackson, across bridge, to break through ribbon, signifying official opening of $82 million bridge. But when Helming stopped car short of ribbon to allow photographers a chance to get into position, car failed to start again. It had to be pushed through final ribbons, then started by compression. (Journal photo by Bob Bach)

7276
N. L.

NEWS RELEASE

OREGON STATE HIGHWAY DIVISION

PUBLIC AFFAIRS OFFICE
SALEM, OREGON 97310
Phone 378-6546

For further information, contact:

Nancy Grant

November 13, 1973

73-338-Se

Portland residents driving home in the Thursday night rush hour traffic will find their driving patterns changed.

The Oregon State Highway Division anticipates that the $82 million Fremont Bridge will be in operation in time to handle the evening traffic flow following a brief opening ceremony at 1:30 p.m.

Frank Branch Riley, long--time exponent of good highways, will be the first to drive across the new super-bridge which will handle 50-60,000 cars per day initially, the majority of which will be directed from the Marquam Bridge.

The bridge and its view were opened to inspection by people on foot, bicycle, wheel chair, roller skate and tricycle Sunday.

"The Highway Division is pleased with the response that was shown on People's Day," said Nancy Grant, coordinator.

Some 25,000 to 35,000 persons are estimated to have packed the bridge to take pictures and stroll across the 1,200-foot main span, third longest arch in the world.

Robert Schroeder, assistant state highway engineer, who was formerly engineer for the Portland area, said the bridge completes the downtown core freeway system, and is expected to improve the flow of traffic without materially adding cars to the downtown area.

(more)

"The Fremont Bridge will provide an alternative crossing of the Willamette River in case of tie-ups on other bridges," Schroeder said.

"It will also provide an alternate route for traffic approaching the core area from any of the existing freeway facilities," he said.

Travel routes of persons in the Portland area will also change as a result of the bridge; in some cases saving up to two or three miles of travel time.

Chief changes in driving habits will include north-and south-bound traffic on I-5 through the Portland Metropolitan area and traffic from east to west destination points via the Banfield Freeway to Northwest Portland.

They are:

---Truckers and workers going to the Northwest Portland industrial area from I-5 south will no longer need to utilize local streets and the Broadway Bridge.

---Southbound autos will now be able to save two miles off of the homebound trip to Beaverton via the Sunset tunnels by utilizing the Fremont Bridge and the Stadium Freeway rather than I-5 South-Marquam Bridge-Stadium Freeway route.

---Traffic to the Central Business District south on I-5 previously used either the Morrison or Marquam Bridge can now use the Fremont Bridge to exit at either 16th and Glisan or 16th and Burnside.

The greatest time and distance savings will be to traffic from the Banfield that must reach Northwest Portland and previously utilized the round-about Marquam Bridge-Stadium Freeway loop.

East-west traffic on surface streets, via the Steele or Broadway Bridge will also be reduced when autos begin utilizing the Fremont Bridge.

# # # # #

RECEIVED
NOV 14 1973
OFFICE OF
DIRECTOR of TRANSPORTATION

#12276 11-11-73 S

Kidic.

FREMONT BRIDGE

GRAND OPENING

AN EVENTFUL DAY.

SUNDAY Nov. 11th., 11am to 7:30pm.

PHOTO CONTEST

CONTEST RULES

FOR ALL COMERS, PRIZES FOR BEST FREMONT BRIDGE PICTURE TAKEN NOV. 11TH, BLACK & WHITE OR COLOR. ALL ENTRIES MUST BE SUBMITTED TO KGW RADIO, P.O. BOX 148, PORTLAND 97207, BEFORE DEC. 1, 1973. NO SMALLER THAN 3" x 4" OR LARGER THAN 11" x 14".

ACTIVITIES!

BICYCLES ..... ON THE BRIDGE FROM 10 AM TILL NOON

ARTS & CRAFTS ..... DISPLAYED FROM 1 TO 4 PM

CREW BOAT RACES ... 2:00 PM, FINISH AT BRIDGE

SQUARE DANCING ... ON BRIDGE FROM 4 TO 5:30 PM

ENTERTAINMENT ..... NOON TILL 4:00 PM, RIVERGATE BAND (ALL KINDS OF MUSIC)

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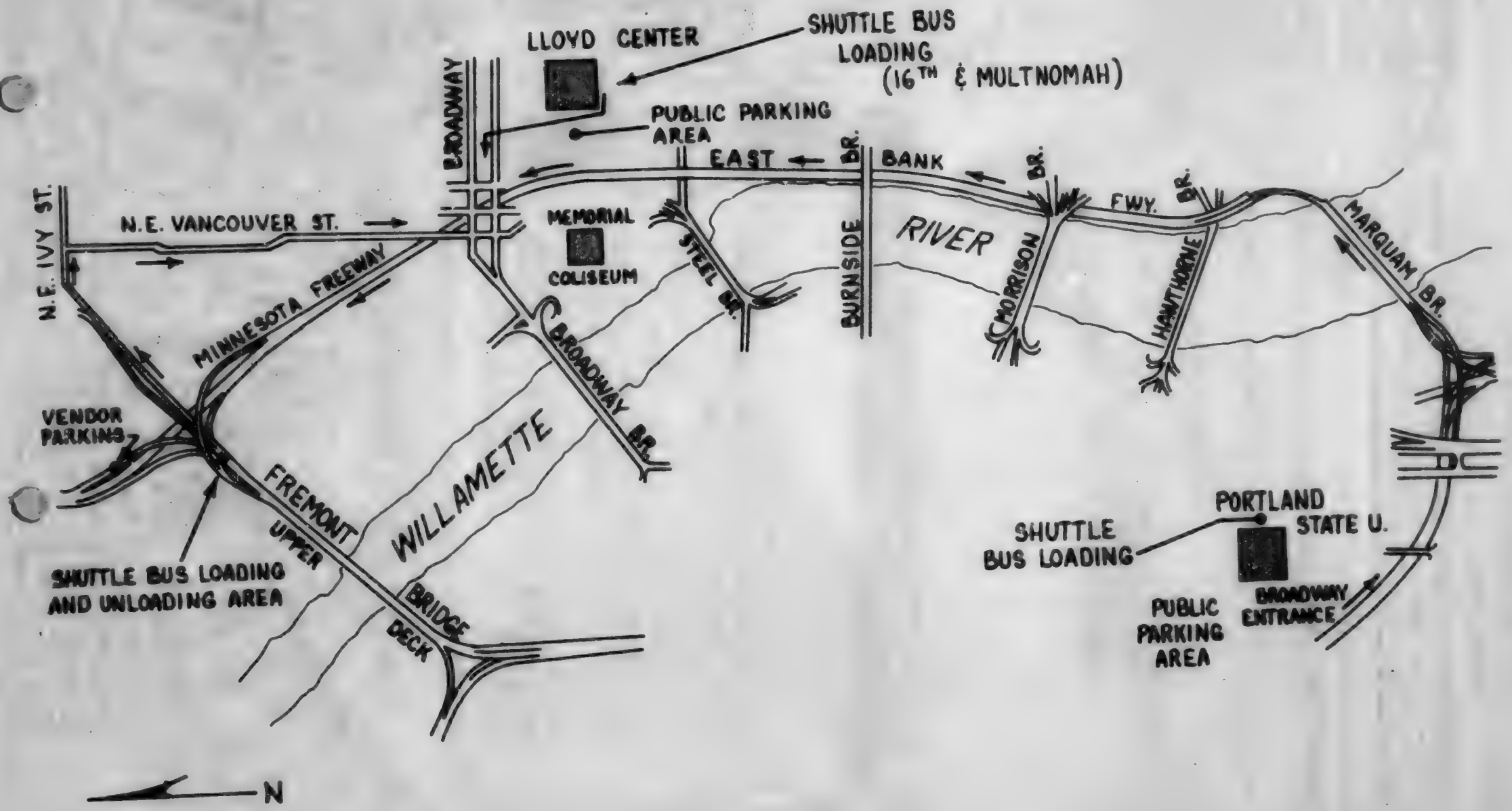
NOV 8 1973
Office of
Assistant State Highway Engineer

TRANSPORTATION

SHUTTLE BUSSES (TRI-MET) FROM PORTLAND STATE PARKING LOT, (BROADWAY ENTRANCE) LLOYD CENTER AT 16TH AND MULTNOMAH.

[SEE MAP ON REVERSE SIDE]

FREMONT BRIDGE
SUNDAY - NOV. 11
11 A.M. - 7:30 P.M.



727C
Add.

November 6, 1973

Mr. Forrest Cooper
773 Meadowlawn Drive, SE.
Salem, Oregon 97301

Same letter to:

R. L. Porter
860 Empire, NW
Salem, OR 97304

Dear Coop:

The Highway Division plans to open the Fremont Bridge, one of the State's major engineering achievements, to traffic on Thursday, November 15. The opening ceremonies will begin at 1:30 p.m. and will be brief and simple.

Because of your initiation and participation in the construction of this project, Chairman Jackson and I feel it fitting and proper that you help celebrate its opening.

The official party will meet at the River Queen Restaurant, 1300 N. W. Front Avenue, at the foot of the west end of the bridge, at 11:45 a.m., for lunch as our guest. You may park your car in the restaurant parking lot and transportation will be furnished to and from the ceremonies.

Following the luncheon, the official party will ride across the bridge in antique cars. En route across the bridge, they will break a banner announcing the opening of the bridge. An honored guest will be Mr. Frank Branch Riley, a noted Oregonian who is in his nineties and is known as the "Father of the Interstate Bridge". He will ride across the bridge in the lead car with Mr. Jackson. At the end of the bridge, the cars will stop and Mr. Riley will be presented a plaque commemorating the opening. This will complete the ceremonies.

A "People's Day" is planned for Sunday, November 11. The bridge will be opened to the public on foot so they may take pictures and get a view of the city that will not be available once the bridge is opened to traffic. Pedestrians will be permitted on the bridge from noon to 8:00 p.m. on that day.

I hope that you will be able to join us in this occasion. Please let me know so that arrangements may be made.

Sincerely,

George M. Baldwin
Director of Transportation

GMB:fn

cc A. E. Johnson
Gary L. Sund
Robert E. Whipps

FORM E-30

#7276
Dedication

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon 97213

DATE October 31, 1973

TO GARY L. SUND

FROM R. N. BOTHMAN
Metropolitan Engineer

SUBJECT FREMONT BRIDGE OPENING

An expression of considerable concern has been given me by the various persons in the Metropolitan Section involved with the Fremont Bridge opening.

The prime concern seems to rest with the activities of KGW insofar as the complete turn-over of the activities of the day to that organization. By complete activities, I mean scheduling of the concessions, security measures, signing, handling traffic, handling buses, designating parking lots, and handling the program.

You have carried the major portion of this activity to date, assigning the specific duties to Nancy Grant. She, in turn, has been contacting the various persons in the Metro Section involved. It appears that the concern exists due to lack of coordination or lack of knowledge between these persons and what the other person is doing and how their various activities fit together.

Due to the concerns, I met with Al Harwood, Bob Cunningham and Ted Inloes, and reviewed the activities for both the open house and the opening of the bridge to traffic.

The following conclusions were reached and I plan to proceed as indicated.

FREMONT BRIDGE OPENING TO TRAFFIC NOVEMBER 15

1. The banner utilized for the dedication will include the legend "Fremont Bridge Opening - Portland, Oregon - November 15, 1973 - Oregon State Highway Division - Murphy-Pacific Inc." The size of the banner will be approximately 8' x 48'. Nancy Grant has engaged a sign maker to produce the sign. Ted Inloes will handle the details and get the banner in place the 15th.

2. Murphy-Pacific representatives will be included in the dedication with Mr. Jackson and Mr. Yturri, Highway Commissioners, and will be in the initial cars in the Antique Car Caravan. I will convey this information to Al Johnson. I will write the invitation to Jay Murphy. Nancy will handle the necessary details to include these two persons as passengers.

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NOV 2 1973
Office of
Assistant State Highway Engineer

NOTED
H.S. COULTER

3. Ivy Street Ramp will be utilized to line up the general public who appear in the area prior to the opening; in other words, it will be a storage ramp. The other two ramps from I-5 will be closed and persons who develop a problem waiting in those locations will be directed to the Ivy Street Ramp by police.

4. Al Harwood will handle all police necessary to prevent traffic problems at access points to the bridge; in other words, to keep these vehicles moving, also to control Ivy Street area.

5. Any other ceremony will be left to Murphy-Pacific.

FREMONT BRIDGE OPEN HOUSE

1. The activities of KGW will be limited to the following:

   A. Entertainment, subject to approval of Nancy, also open to others via Nancy. KGW should not be in a position to deny any groups onto the bridge.

   B. KGW will proceed with the photo contest.

   C. KGW will handle the necessary promotions, being approved by Nancy.

2. No commercial selling of crafts will be allowed.

3. The coffee wagons will be coordinated by the Highway Division. Ted will handle this activity. They will be allowed in the designated area as shown by KGW. If too many wagons request permission to come under the bridge and can not be accommodated in the designated areas, they will be told that there is no space for them. No set number will be established.

4. The emergency facilities provided by Outside-In Crash Crew as outlined by KGW are satisfactory.

5. All signing will be handled by Oregon State Highway Division. Ted will handle signing for the "open house".

6. The Highway Division will provide the buses working through Tri-Met to schedule one bus from the west side of the river at Portland State and the necessary buses to provide for 15-minute pickup from an area near the Lloyd Center. The Lloyd Center needs to be contacted for clearance for this activity. The point for pickup should be near the Lloyd Center, as agreed by Tri-Met, not necessarily in the parking facility. Ted should coordinate with Nancy, then be sure that Lloyd Center and Tri-Met go over the details to establish the actual routes.

7. All security, including special, State and City, will be coordinated and arranged by Cunningham.

8. Ted will arrange for the van, including an 8'-10' awning. The van will serve as a headquarters. Pictures will be placed on the outside of the van under the awning by Nancy.

9. No P.A. system will be needed.

10. Ted will provide the necessary receptacles in the form of 55-gallon barrels; I would suggest that we have about ten. Be sure they are newly painted, etc.

11. Ted will provide a radio car at the van which will provide communications. Al Harwood will be sure that the State police are available to monitor the highway channel; if necessary, we'll operate the Metro Section.

12. Ted will provide two privies, one each, which should be located in the concession area east of the easterly expansion joint.

13. Ted will arrange for one additional small generator, trailer mounted, in addition to the generator on the van, to be used for press activities.

14. No traffic whatsoever will be allowed on the ramps with the exception of official cars and the buses.

15. Al Harwood will provide for the necessary control of people and traffic at Ivy Street. He should also check with the City police to be sure that they handle traffic in the vicinity of Ivy, Fremont, Vancouver and Williams.

16. Ted will handle two flags, one American and one OREGON, together with necessary standards which will be mounted at the van. This will cover Armistice Day.

17. The bikes will be scheduled from 10:00 a.m. until noon; Nancy will coordinate this with Sam Oakland.

The chairman and person in "command" at the bridge on both of the two days, the 11th and the 15th, will be Bob Cunningham. All activities should be coordinated with him on those two days. He will call the shots as necessary to deviate from any of the above plans.

Later discussions with Nancy Grant have established that we will review the above items on Thursday, November 1, at lunch, then meet with KGW representatives at 1:00 p.m. to detail final activities.

Later discussion with A.E. Johnson okay'd above. The other Commission members will be invited the 15th, plus Bruno and Hill. Contractor representatives should include Murphy and Al Tokola.

ar

cc A.E. Johnson, H.S. Coulter, Al Harwood, Bob Cunningham, Ted Inloes, Nancy Grant

7716
Dedications

FORM E-30

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

RECEIVED
STATE HWY ENGR
OCT 23 '73
REFER TO
FOR
Info | Invest | R/D | D/R | Sign | Act | File

NOTED
A. E. Johnson

DATE October 23, 1973

TO F. B. Klaboe
Administrator and State Highway Engineer

FROM Gary L. Sund
Public Affairs Director

SUBJECT Opening of the Fremont Bridge

This memo will supplement that written by Bob Bothman on this subject dated October 8, 1973. The plans have been generally reviewed by the Director of Transportation and Deputy State Highway Engineer.

Frank Branch Riley who has had an active interest in bridges and highways all his life and was one of the early promoters of the Interstate Bridge will be the first passenger to be escorted across the Fremont Bridge in a vintage automobile.

Flanked by Highway Commission Chairman Glenn Jackson and Governor Tom McCall (or his representative), Riley will lead a parade of antique automobiles starting from the East Fremont Interchange at 1:30 p.m. The traditional ribbon-cutting and speechmaking will be dispensed with in order to open the bridge in time for the evening rush hour traffic.

Surface street access and parking is available at the east-end Ivy Street entrance where activities will commence. (The car clubs can enter on the southbound ramp from the Minnesota if necessary to separate them from the general public). In place of the ribbon-cutting, a banner with the slogan FREMONT BRIDGE OPENING will be hung across the bridge entrance for the first car to drive through. On arriving at the West End, a plaque or bridge replica will be presented by Governor McCall and Mr. Jackson to Riley commemorating the event.

The objective of the opening program will be to honor Frank Branch Riley for his dedication to better highways and bridges and to provide for appropriate news coverage of the event.

Plans are underway also for a "People's Day" on the Sunday preceding the opening (November 11) with the intent that a relaxed, carnival mood might prevail. We hope that people will enjoy themselves.

cy Keaboe

The objective of the People's Day will be to respond to the many groups and individuals who want to make use of the bridge before it is turned over to automobile use. We hope that people will enjoy themselves. We will, however, set limits in that no boisterous or rowdy activities will be allowed; and motorized vehicles will be banned. Security precautions will be taken. (Provision is being made by the Metropolitan Section for additional security guards and by the Legal Department for

$5 million in excess insurance). KGW Radio has volunteered to help promote the activities. The mobile van which has proved to be a popular source of factual information, will be set up complete with models, brochures and the Fremont Bridge film. The van will also serve as a communications center, with set up and staffing to be done by the Metropolitan Section. Tentative hours will be 12 noon to 8:00 p.m.

Local groups will sponsor a camera contest with these two categories: Best Photograph taken on People's Day (which will run from noon to 8 p.m.) and Best Photograph taken prior to People's Day. Efforts will be made to enlist accomplished Oregon photographers to judge the contest.

To cut down on traffic, shuttle bus service will be provided from fixed locations in the vicinity of the bridge. A schedule of publicity is as follows:

---October 25 Release to Portland media on camera contest

---October 29 Mail public service announcements (written or taped) to Portland area public service directors (20 for radio and four for television)

---November 1 Send flyer to Highway staff people encouraging them to participate in People's Day events.

---November 1 Send nostalgia photo feature on the old and the new in bridge building to weeklies.

---November 5 Release to daily and wire service featuring People's Day events and mention of opening on the 15th.

---November 12 Release to daily and wire service on opening plans; include how public reaches the Ivy Street ramp and how commuting routes will be changed after bridge opens. Story should feature the idea that completion of the bridge completes the downtown traffic loop. (Exception should be the Sunday Oregonian which should have this information by November 6).

GLS:sj

cc: George M. Baldwin, A. E. Johnson, H. S. Coulter, E. S. Hunter, R. L. Schroeder, Walter Hart, Robert Bothman, Bob Cunningham, and John Early.

7276
Sad.

DIRECTOR'S FILE
Hwys
CF

OREGON STATE HIGHWAY DIVISION

September 26, 1974

Mr. Ed Mapes
Secretary, C.R.D.C.
International Longshoremen's
and Warehousemen's Union
406 N. W. 18th
Portland, OR 97209

Dear Mr. Mapes:

Mr. Easton Cross of Multnomah County recently forwarded your suggestion to memorialize the Fremont Bridge for the late former Senator Wayne Morse.

Quite a few years ago during the early planning stages of the Portland metropolitan freeway system, the transportation study designated this river crossing by its present name. The name has been entered in many records and has received widespread common public usage. It would be very difficult to effect a name change at this late date.

In addition, the rules and regulations governing freeway signing standards set forth by the Federal Highway Administration explicitly exclude any signing that would designate any bridge or highway as a memorial. With this inability to install appropriate signing, the memorializing of the bridge would lose much of its meaning.

NOTED
JACK GRAHAM

I appreciate your interest and if you have any further questions, please feel free to ask.

RECEIVED
SEP 26 1974
OFFICE
DIRECTOR of TRANSPORTATION

Very truly yours,

ORIGINAL SIGNED BY
A.E. JOHNSON

A. E. Johnson
Deputy State Highway Engineer

LEG:kw kmb
cc: Easton Cross
bc: George M. Baldwin
F. B. Klaboe
R. L. Schroeder
L. E. George
R. N. Bothman
L. W. Rulien
Ted Spence

6-123

Fremont: He Helped Settle the

A Century Ago an Ambitious Young Lieutenant Led 40 Hardy Voyageurs Through Ice, Snow, Over Untracked Mountains to Promised Land of Oregon

BY PAUL HAUSER
Staff Writer, The Oregonian

AROUND THE FIRES of the emigrant camp in Elm Grove in what is now Kansas there was much talk on a June night in 1843. The emigrants had been gathering forces there to set out across the plains and the mountains for Oregon, for the wonderful Wallamet valley of which trappers and missionaries had borne back tales to the east.

The talk around the fires each night had been of the future and what it might hold in a new land for the bearded men and the women in calico who were setting out through known and unknown perils. But tonight it was about the little group of men, hardy characters all, who had pitched camp near Elm Grove that day.

"Did you see the cannon?" one of the men around the fire asked. "Reckon it'll fix any redskins that come around askin' for trouble."

"It shoots a 12-pound ball and it's just like the ones the Frenchies used against them A-rabs in Algeria," another chimed in.

"Guess the lieutenant's fixed for trouble, even if he does say he's just out to look for rocks and plants and a couple of rivers," said a bearded Missourian. "If I were an Indian I wouldn't want to try to scalp any of that crowd."

"They say Kit Carson is going to join them later."

LIEUTENANT:

Talked Over Plans

For Exploration

"Then the Injuns really better keep clear. He'll scalp 'em first and ask later."

Away from the emigrant camp, the lieutenant, Lieutenant John Charles Fremont, United States corps of topographical engineers, talked with Thomas Fitzpatrick, who with Carson was to be his guide, about plans for his projected exploration of the great basin lying between the Rockies and the Cascade mountains.

Lieutenant Fremont, an ambitious young man, was about to embark on his most ambitious exploration, the expedition that was later to be called his "great expedition."

This year, 1943, is celebrated all along the Oregon Trail as the centennial of the passage over it of the first emigrant wagon trains. The year is as well the centennial of Fremont's great expedition to Oregon and California. His expedition and his reports on it were a great influence in carrying on the peopling of the west begun by the emigrants.

FREMONT:

Was at His Height

As an Explorer

Fremont, whose later integrity and right to be known as a national hero is still often in question, was perhaps at his height as an explorer and scientist, where he won his first fame, on the trip that took him and his party of voyageurs through the Colorado Rockies, through Wyoming, along the Great Salt lake, down the Snake river into Oregon, down the Columbia to The Dalles, down through Oregon's central plateau into California, across the Sierra to Sutter's farm and from there home again through the southwest.

It was an expedition fraught with hardship, with marches through snow and ice over untracked mountains. The 40 men who made up the party sometimes lived for days on the poor food of the lowest Indians, roots and pine nuts.

The expedition, its men armed with Hall's carbines and a brass 12-pound howitzer, left Kansas City, then only a town, on May 29, 1842. Its equipage and provisions were transported in 12 mule-drawn carts and a light, spring-mounted carriage bore the scientific instruments used by Fremont in his observations.

Following and exploring the Republican and Arkansas rivers, the party, sometimes divided, came to St. Vrain's fort. There Fremont sent his main force, led by Fitzpatrick, along the emigrant route to Fort Hall, while he led an exploring expedition west and north over the mountains.

Kit Carson, probably then the most famed guide and hunter in the west, joined the party near Pueblo, Colo., much to Fremont's delight. Exploring as it went, the party moved on, crossing the Rockies through South pass on August 13.

Making his way along the Bear river near the Wyoming-Idaho boundary, Lieutenant Fremont was in frequent contact with parties of emigrants, making their way to Oregon. It was a great heartening to most of them to find an officer of the United States army, with armed men and a howitzer at his back, in the wilderness they were traversing.

RUBBER BOAT:

Was Included In

Voyageurs' Equipment

Fremont's party came to the Great Salt lake on September 6 and explored some of its islands by the use of a rubber boat which was among the equipment carried. On one of these islands, where no man had ever stood before, Fremont left the brass end cap of his telescope and wondered if some future trave
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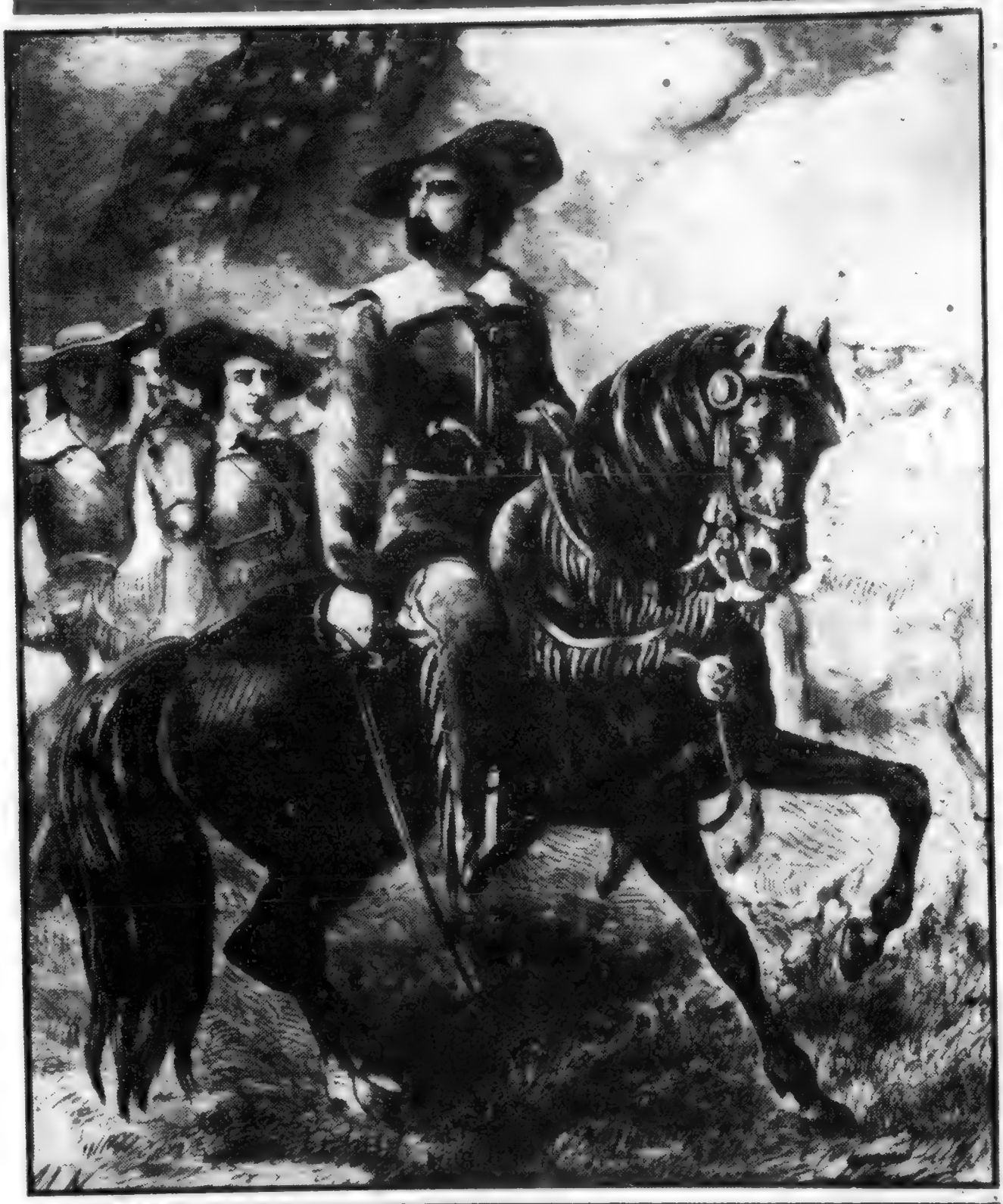

Lieutenant Fremont, romantically astride his horse in this reproduction of an old drawing, was a heartening sight to emigrants headed for Oregon. An officer of the United States army, with armed men and a howitzer at his back, he represented security against hostile Indians.

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future traveler would discover it with amazement.

Continuing on westward, Fremont came to Fort Boise, on the right bank of the Snake river, on October 9, and crossed to the Malheur in Oregon on October 11. Proceeding over the Blue mountains, he came to the Whitman settlements at Walla Walla on October 24, but missed seeing Rev. Mr. Whitman, who was at The Dalles.

A day later the Fremont party saw the Columbia and began seeing parties of emigrants, many of whom they had seen before on the plains, and many acquaintances were renewed.

The main expedition reached The Dalles on November 4.

Fremont, on reaching The Dalles, had done exploring enough to stand up as a considerable feat. Winter was approaching and he could well have moved on down into the Willamette valley or to Fort Vancouver and waited for spring. Instead he decided to push on with his explorations south from The Dalles.

Leaving his companions, Fre-

of the lake. He established a camp on the western edge of the marsh and, believing he was in the midst of hostile Indians, had the howitzer fired a number of times. The noise effectively kept away the Indians, though it was later learned they were not of a hostile tribe which had attacked the party earlier.

Resuming its journey on December 12, the party began to learn the real meaning of hardship. The expedition headed east across the marsh and for approximately two hours the men struggled to get their pack animals over a mile and a half of icy surface between the camp and the shore of the marsh.

DEEP SNOW:

Exhausted Freemont's Floundering Party

Next day their route led eastward from the marsh. It was no easier. There were fallen trees in the path and the ground was covered by from 12 to 14 inches of snow. They floundered on, however, and, after exhausting themselves in four hours' travel, camped alongside

viewed it was given the contrasting name of Winter ridge.

Taking a generally southeastern direction from Summer lake, Fremont's party on December 20 came to another lake "much larger" than the first. Its water was alkaline and not fit to drink and a shrub, growing luxuriantly about its shores, provided the only firewood.

Fremont named this lake, in what is now central Lake county, Lake Abert, after his chief, Colonel Abert of the topographical engineers, not knowing that Abert had tried to stop his expedition.

Proceeding on, occasionally running into Indians, who stole horses and disappeared but did not harm the party, Fremont came to a group of small lakes which later came together and are now called Warner's lake.

Sometime about Christmas, a dreary day spent on the shores of a small lake and enlivened for the men only by extra rations of sugar and a little brandy, the Fremont party passed into Nevada, out of Oregon. The year 1843 ended with them at a little lake, now named New Year lake, just in-

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Leaving his companions, Fremont went by boat down the Columbia to Fort Vancouver, where for two weeks he was the guest of Dr. McLoughlin, with whom he was greatly impressed. He spent his time gathering together provisions and additional equipment for the continuation of the exploring trip.

COLD RAIN:

Was Disagreeable to Young Lieutenant

Some interesting observations to an Oregonian are those made by Fremont in his journal on his trip from Vancouver to The Dalles. He spoke often of "the disagreeable and cold rain" and of the swiftness of the current on approaching the rapids of the cascades near the present Cascade Locks.

"The current was so very swift," he wrote, "and we were obliged to cordelle the boat along the left shore, where the bank was covered with large masses of rocks. Night overtook us at the upper end of the island, a short distance below the cascades, and we halted on the open point. In the meantime, the lighter canoes, paddled altogether by Indians, had passed ahead and were out of sight. With them was the lodge, which was the only shelter we had, with most of the bedding and provisions. We shouted, and fired guns, but all to no purpose, as it was impossible for them to hear above the roar of the river; and we remained all night without shelter, the rain pouring down all the time. . . ."

IMMIGRANTS:

Were Streaming Along Banks of Columbia

Many immigrants were streaming down the Columbia, some along the banks and some in boats. Occasionally the boatman would come to grief and they would lose their goods and sometimes their lives as their frail craft upset in the current. Fremont witnessed such an accident occur to a German biologist named Luders, who had collected many valuable biological specimens in his trip across the plains and had lost them all.

Fremont was back at The Dalles on November 18, and on November 25 Fremont writes: "We were all up early, in the excitement of turning towards

Picture above shows Lieutenant John Charles Fremont, whose expedition to Oregon and California helped people the west.

home. The stars were brilliant and the morning cold, the thermometer at daylight 26 degrees."

During his stay at The Dalles he had made side expeditions, on one of which he took bearings on "Mount Regnier, St. Helens and Mount Hood," and was disappointed that clouds prevented him from seeing more of the great peaks of the Cascade range.

The party that started out from The Dalles with the aim of reaching and exploring Klamath lake on its way to California and home was some 25 men. Added to the party was a young Indian boy "who wanted to see the whites." To him the bronzed voyageurs of Fremont's party were apparently not the whites.

The party had with it 104 horses and mules, carrying supplies for three months. All wheeled equipment except the howitzer, which had already proved useful in frightening Indians, was abandoned at The Dalles.

Traveling south along the course of the Deschutes, Fremont found the country with its gullies of basaltic rock, its mountain ridges of lava, its plains covered with forests of pine and cedar, extremely interesting and wrote much of its variety in his journal.

While the area he was traveling was fairly familiar to his guides and no hostile tribes were met, the journey down through the Deschutes valley to Klamath had many hardships, particularly for the horses. At one time there was no forage for the stock for two days and snow water had to be melted to provide them water.

On December 10 the party arrived at what Fremont thought was Klamath lake, but which was in reality Klamath marsh, many miles to the north of it was later learned they were not of a hostile tribe which had attacked the party earlier.

Resuming its journey on December 12, the party began to learn the real meaning of hardship. The expedition headed east across the marsh and for approximately two hours the men struggled to get their pack animals over a mile and a half of icy surface between the camp and the shore of the marsh.

DEEP SNOW:

Exhausted Pioneers Floundering Party

Next day their route led eastward from the marsh. It was no easier. There were fallen trees in the path and the ground was covered by from 12 to 14 inches of snow. They floundered on, however, and, after exhausting themselves in four hours' travel, camped alongside "a considerable stream with borders of good grass."

On December 14, Fremont's journal records: "Our road was over a broad mountain, and we rode seven hours in a thick snow storm, always through pine forests, when we came down upon the headwaters of another stream on which there was grass. The snow lay deep on the ground, and only the high swamp grass appeared above. The Indians were thinly clad and I had remarked during the day that they suffered from the cold. This evening they told me that the snow was getting too deep on the mountains, and I could not induce them to go any further."

The Indians turned back, leaving the party without guides even remotely familiar with the country. Carson and Fitzpatrick knew only of it what they had heard from Indians and from the few trappers they had talked to who had penetrated through what is now south central Oregon.

Traveling through snow about three feet deep "which, being crusted, very much cut the feet of our animals, the party on December 16 labored arduously through a darkling snow storm to reach the top of a mountain.

"Towards noon," Fremont writes, "the forest looked clear ahead, appearing suddenly to terminate; and beyond a certain point we could see no trees. Riding rapidly ahead to this spot, we found ourselves on the verge of a vertical and rocky wall of the mountain.

BEAUTIFUL LAKE:

Was Spread Along Foot of Mountains

At our feet—more than a thousand feet below—we looked into a green prairie country, in which a beautiful lake, some twenty miles in length, was spread along the foot of the mountains, its shores bordered with green grass. Just then the sun broke through the clouds, and illuminated the country below, while around us the storm raged fiercely."

The lake, where "all was like summer or spring," was named by Fremont Summer lake, a name which still sticks to its site in Lake county, and the ridge from which the party Its water was alkaline and not fit to drink and a shrub, growing luxuriantly about its shores, provided the only firewood.

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The hardships of the party grew worse as they made their way south along the Sierras. Snow surrounded them and they broke trail arduously.

The story of their battle to cross the Sierras to make their way over what is now only a few hours' ride by automobile can only be appreciated when read in Fremont's journal. From February 2 until February 20 they toiled on the mountain and on that day reached the summit, "1000 miles by our traveled road from The Dalles of the Columbia." The pass is now known as Carson's pass and has an automobile road.

HARD TIMES:

Made Men Insane But None Hesitated

The descent, not easy, brought them on March 8, 1844, to Fort Sutter, the great farming establishment of Captain Sutter on the Sacramento river.

There they recuperated for two weeks from a journey of which Fremont wrote:

"Times were severe when stout men lost their minds from extremity of suffering, when horses died, and when mules and horses, ready to die of starvation, were killed for food. Yet there was no murmuring or hesitation."

The return trip, enlivened by more frequent encounters with Indians and one in which Carson and Alexander Godey wreaked vengeance for horse stealing and murder by riding into an Indian camp, scattering the braves and scalping two laid low by their rifle fire, brought Fremont home again to Fort Bent, Kan., on July 1, 1844, after making what is still probably the greatest western exploration by a single party.

WHITE ASTERS

White asters sang with Lohengrin
At our mid-September troth.
Today I glean in memory
Great masses, pearl as tide-strewn froth,
And pray, for you, white asters blow
In heaven's autumn garden show.

JANET BOOKE,
Portland.

7276 Fremont Bridge Sec., Stadium Fwy. 1973

"CLOSING THE GAP"

#7-76

CLOSING

THE GAP

FREMONT BRIDGE

MARCH 14-16, 1973

OREGON STATE HIGHWAY DIVISION

STADIUM FREEWAY
I-405

STADIUM FREEWAY (I-405)

Purpose

Solving the metropolitan ground transportation problem continues to be the greatest challenge facing the highway planner. Completion of the Fremont Bridge will mark one large step toward the solution of Portland's inner city traffic dilemma. The "loop" pattern being completed in Portland may be the wheel of fortune to the solution of inner city traffic. An inner loop encircles the central business district. Outside the inner loop is an outer loop having a radius of several miles. The two loops are connected by laterals — forming a pattern. The theory is to route traffic not destined to the core area around the inner city, eliminating congestion.

In Portland, the inner loop is formed by the Stadium and Eastbank Freeways. Completion of the Fremont Bridge late in 1973 closes the loop. The outer loop, partially formed by I-205 and the Beaverton-Tigard Expressway, is taking shape.

The spokes of the wheel include I-5, the Lower Columbia River Highway, Canyon Road, the Oswego Highway, McLoughlin Boulevard, the Banfield Freeway and the proposed Mt. Hood Freeway augmented by major street arterials.

Bridge Complex

One of the major elements in the Stadium Freeway is the Fremont Bridge and its east and west approaches. The cost of the entire bridge complex is estimated at $85 million. As part of the nation's interstate highway system, the complex is financed 92 percent by federal highway funds and 8 percent by state highway funds.

The West Fremont Interchange will provide connections from the Stadium Freeway at Johnson Street and from the Lower Columbia Highway (US30) to the bridge. The East Fremont Interchange will provide connections from the Minnesota Freeway (I-5) at Fremont and Ivy Streets.

Design

The bridge design incorporates a stiffened tied arch structure with an orthotropic upper deck to carry four lanes of westbound traffic, and a conventional portland cement concrete lower deck to carry four lanes of eastbound traffic. Its 16 traffic lane miles, equivalent to a two-lane bridge eight miles in length, make the Fremont Bridge the largest structure on the state highway system. The bridge is believed to be the third longest steel arch structure in the world.

The common pier between the approaches and the main river spans has a shaft at its midsection measuring 47 feet by 16 feet; the footing is 39 feet by 80 feet. The footing is supported by 160 HP14 x 102 steel piling with a basic design load of 100 tons per piling.

The main piers at the harbor lines are as follows:

West Side- Pedestal 41 feet x 106 feet x 43 feet high
Footing 101 feet x 117 feet x 18 feet thick
Seal 101 feet x 117 feet x 10 feet thick
Piling 672 HP14 x 102 steel

East Side- Pedestal 36 feet x 106 feet x 54 feet high
Footing 76 feet x 118 feet x 17 feet thick
No seal
No piling

Statistics

The main span of the structure stretches 1,255 feet, 4 inches. Each anchor span is 451 feet, 10 inches in length.

The bridge will contain 37,812,000 pounds of structural steel of all classifications.

There will be 3,910 cubic yards of concrete in the structure.

It will require 1,010,000 pounds of reinforcing steel.

Roadway widths of 68 feet in each direction will provide four 12-foot travel lanes with 10-foot shoulders on either side. The decks are vertically separated and are 34 feet from grade to grade leaving plenty of room for directional signs and lighting.

Minimum clearance at harbor line above low water is 167 feet. Clearance at the center of the bridge is 175 feet. The lower roadway is 184 feet above low water, higher above water than the Astoria Bridge. The top of the arch of the structure is 381 feet above the low water line.

Comparisons

The top of the arch will be:
159' above the top of Emanuel Hospital
201' above the Union Station Clock Tower
207' above the top of the Memorial Coliseum
133' above the sign on the Cosmopolitan Motor Hotel
241' above the top of the sign on the Northwest Natural Gas Co

Center Span

The center span of the Fremont Bridge was assembled at the Port of Portland's Swan Island Industrial Park about 1.7 miles from the bridge site. Movement of that center span from Swan Island to its eventual location between the existing approaches high above the Willamette River represents one of the most remarkable engineering events in the history of bridge building.

The span, 902 feet long, 81 feet wide and weighing 6,000 tons will be floated upstream on barges and lifted into position. Two barges and a fleet of six tug boats will be employed to move the span into position.

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ill be floated upstream on barges and lifted into position. Two
arges and a fleet of six tug boats will be employed to move the span
to position.

It is estimated that it will take from 3 to 4 hours to float the span to the bridge site. Ten more hours will be needed to position the span in its proper location and to seat the lifting rods. The positioning will be accomplished by tugs and the use of anchor lines.

A series of 32 jacks, eight at each corner of the span, will be used to lift the span approximately 170 feet above the river and into final position. The jacks were specially designed for the operation. Each is equipped with a safety check valve to hold the hydraulic pressure on the jacks. Each will operate at 5,600 pounds per square inch during the lift. Their rated operating pressure is 11,000 psi with a bursting pressure of 25,000 psi. The burst pressure of the hydraulic hoses is 20,000 psi.

The jack system is equipped with an audio alarm system to warn if any rod is not carrying its load. The system can operate with only six of the eight jacks at each corner functioning. The operation of the system can be reversed at any time.

The progress of the lift will be monitored by survey tapes from the center span to the lift platform. The extension time of the jacks is 10 minutes; reset time is 7 minutes. The total time of each cycle of jack operation will be 17-20 minutes. At an estimated two cycles per hour, the entire lift will take about 40 hours.

Construction Projects

The Fremont Bridge complex was contructed in a series of projects beginning in February, 1968. Principal contractors include:

Pier construction and street relocation, estimated cost — $4,256,600, contract dated February 27, 1968, contractor — Peter Kiewit Sons' Co.

West Fremont Interchange, estimated cost — $20,868,475, contract dated April 29, 1969, contractor — Andersen-Hannan.

Bridge superstructure, estimated cost — $28,686,705, contract dated July 3, 1969, contractor — Murphy Pacific Enterprises.

East Fremont Interchange, Unit "A", estimated cost — $14,120,110, contract dated September II, 1969, Willamette River Contractors.

East Fremont Interchange, buildings, estimated cost — $141,990, contract dated September 9, 1969, contractor — E. Carl Schiewe.

East Fremont Interchange, Unit "B", estimated cost $9,472,330, contract dated September 11, 1969, contractor — Willamette River Contractors.

East Fremont Interchange, Unit "C", estimated cost — $2,215,785, contract dated September 11, 1969, contractor — Willamette River Contractors.

West Fremont Interchange, Unit 2, estimated cost — $3,699,335, contract dated August 26, 1971, contractor — Drake-Willamette.

The bridge was designed for the Oregon State Highway Division by the New York design office of Parsons, Brinkerhoff, Quade and Douglas.

Final Picture

When the Fremont Bridge is opened to traffic in late 1973, the inner loop will be complete and provide a westerly bypass of Portland's core area. The full Stadium Freeway (I-405) is 3.4 miles in length and was completed at a total estimated cost of $129,336,200.

Many consider the Stadium Freeway an outstanding example of highway construction, combining aesthetics with safety features to provide a safe, efficient and attractive highway. The facility is the the subject of a film prepared for the Federal Highway Administration for national distribution entitled "Forgiving Highways."

The opening of the bridge will not solve Portland's inner city traffic woes but it should help to ease them.

OREGON
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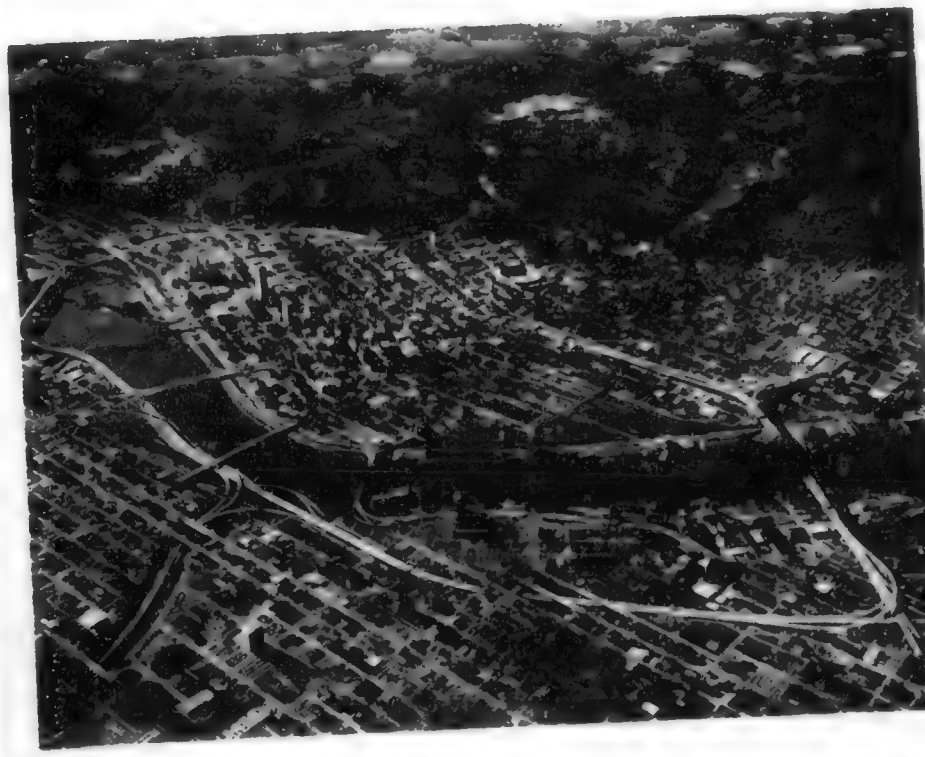
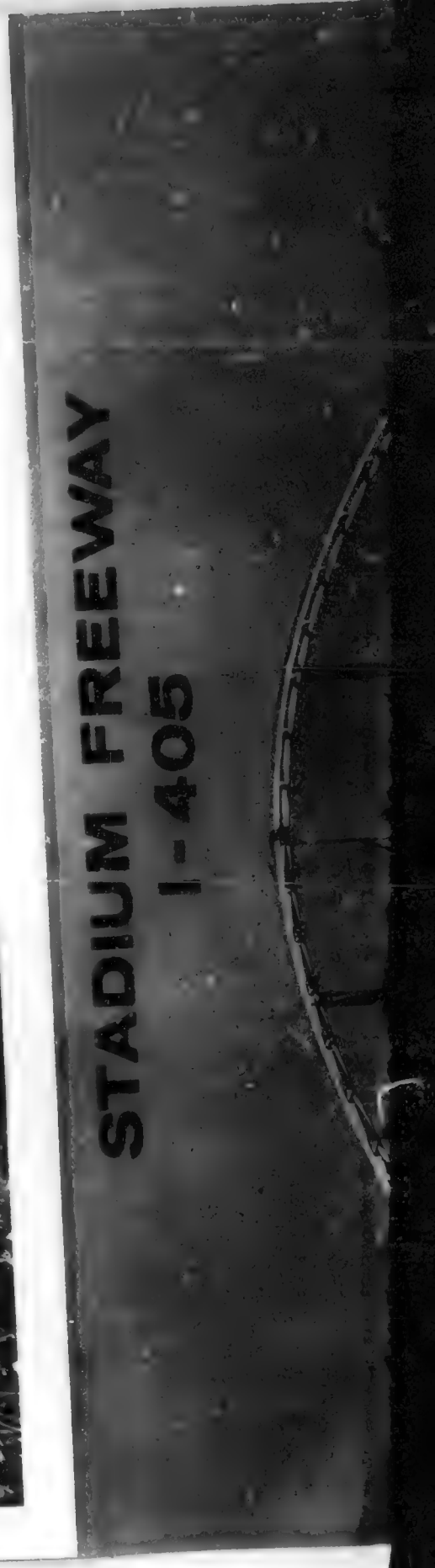
DIVISION

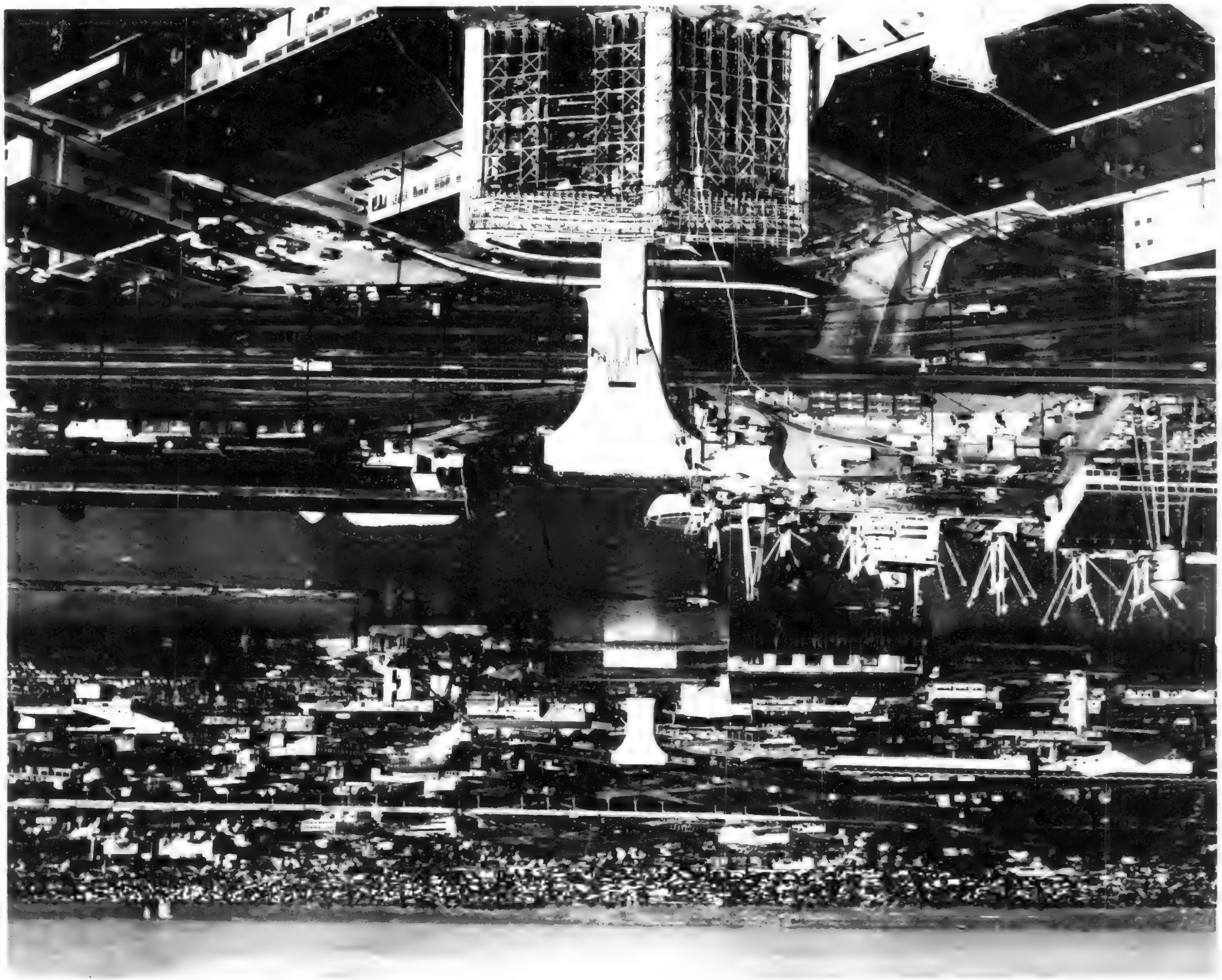




...the Bronx-Whitestone pier

A340-2--Some of the first contract work on the Fremont Bridge involved pier construction and street relocation. This photo, taken on April 27, 1968, shows the work in its early stages.

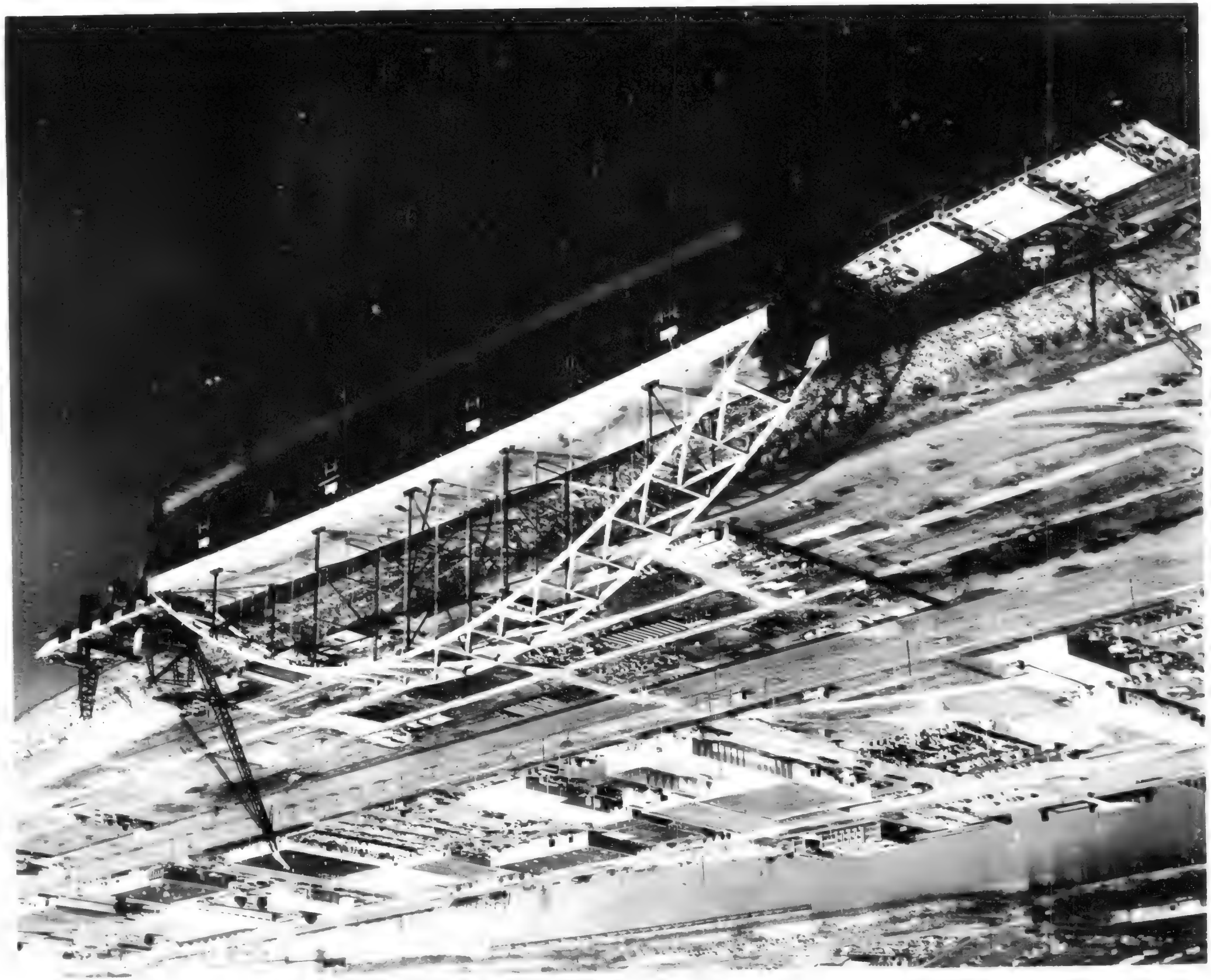
(Oregon State Highway Division Photo)



A400-40--The piers were the first physical evidence of the new Fremont Bridge to

A400-40--The piers were the first physical evidence of the new Fremont Bridge to appear on the skyline. This photo, taken on February 13, 1970, shows the piers still under construction.

(Oregon State Highway Division Photo)



A522-21--The center span of the Fremont Bridge, shown here at its assemblage point at the Port of Portland's Swan Island Industrial Park, will be floated approximately 1.7 miles upstream to the bridge site. The span is 902 feet long, 81 feet wide, and weighs 6,000 tons. The movement upstream and placement between the existing spans of the bridge on March 14 will be one of the most remarkable engineering events in the history of bridge building. Barges on which span will be moved upstream are shown.

(Oregon State Highway Division Photo)

A522-3--The gap between the existing spans of the Fremont Bridge will be closed on March 14 when the center span is floated upstream and lifted into position. Bridge is scheduled for opening late this year and should help to ease Portland's traffic problem.

(Oregon State Highway Division Photo)

A522-13--A view of how the Fremont Bridge will dominate the Portland skyline is shown. Gap between approaches will be closed on March 14 when center span is lifted into place.

(Oregon State Highway Division Photo)

NEWS RELEASE

OREGON STATE HIGHWAY DIVISION

PUBLIC AFFAIRS OFFICE
SALEM, OREGON 97310
Phone 378-6546

For further information, contact: John J. Earley

March 7, 1973

73-47-Se
FOR IMMEDIATE RELEASE

The State Highway Division today announced that the 6,000-ton, 902-foot-long Fremont Bridge center span will be moved from its place of construction at Swan Island in Portland and lifted into place between the existing bridge approaches during the week of March 11-17.

The week-long event will include transfer of the center span from falsework to two large barges, a four-hour float of the span upriver to the bridge site, and a 170-foot lift to final position, which is expected to take 40 hours.

Describing the complex lifting plans to representatives of the news media today, Administrator of Highways George M. Baldwin called the process "one of the most ambitious efforts undertaken in the history of bridge building."

"The combination of immense size of the span, precarious float up the Willamette River, exacting requirements of positioning at the bridge site, and unique lifting procedure has captured the interest of engineers throughout the world," Baldwin said.

(more)

The actual lift is expected to begin about 4 p.m., on Wednesday, March 14, and be completed by midday on Friday.

Division officials and representatives of Murphy Pacific Enterprises, prime contractor on the span operation, explained that the lift will be a slow process.

Once positioned and anchored at the bridge site, 32 hydraulic jacks will be set on the span, 8 in each corner. The span will be lifted in two-foot increments, or about four feet per hour.

It is believed that the 6,000-ton lift is the largest ever of its kind.

Baldwin said that the Division has made preparations to allow citizens an opportunity to view the event.

A "riverfront superintendent's" observation area has been established on the east bank of the Willamette River at the foot of N. Randolph Avenue.

Grandstands have been erected. The Division will also have a mobile information van equipped with models at the bridge and statistical information located at the observation site.

Directional signs have been installed on streets on the east side to assist drivers wishing to reach the site.

The mobile van display will also be located at the Lloyd Building on Thursday and Friday at the invitation of the Port of Portland.

The $82 million Fremont Bridge complex is expected to be complete and open to traffic late in 1973.

When complete, the bridge will be the final link in Portland's inner traffic loop. The city's inner city traffic congestion problems should be measurably improved.

# # # # # #

"CLOSING THE GAP"

(Positioning of center span of Fremont Bridge)

CHRONOLOGY

Preparatory Work

Preparatory work for the lift, the transfer of the center span to the barges, will take place on March 12. The barges will be floated under the span ends at 8:00 AM. The barges are the Florence and Marine Boss.

The barges will be ballasted with approximately 5,000 tons of water. Of this, 3,600 tons will be pumped out to lift the span off the falsework. This will take 4 hours. The estimated water elevation is 9 feet plus or minus. The system can handle a 5½-foot difference in water elevation. The contractor will have a 5-day river stage forecast which should be accurate within 1 foot.

The high tide on March 12 is at 11:00 AM. Transfer of the span load to the barges will occur in steps. Deflection of the span is 1.5 feet to 1.8 feet. The barge cribbing is designed for 1,500 kips for each of eight points.

After the span is transferred to the barges, it will be moved away from the falsework and anchored until March 14.

Span is now located on piers at the Port of Portland's Industrial Park, approximately 1.7 miles upstream from the bridge location.

Floating Span Into Position

The float of the span upriver to the site will start at 3:00 AM, March 14.

Arrival at the site is estimated at 6:00-7:00 AM.

The tow will be made by Knapton Tow Boat with a 2,200 HP lead tug, a 1,500 HP trailing tug and four auxiliary tugs - one at each end of the barges.

The span will be floated into a position upstream of the site along the west bank. The span will be pivoted into position by the tugs and anchor lines. There will be three anchors upstream, two downstream, one along centerline from each barge. These will be 12,000 lb. anchors with 1¼-inch wire rope lines.

It is estimated that the span will be positioned by 10:00 AM. It will take 5 to 6 hours to hook up the rods and prepare for the lift. Lift should start around 4:00 PM. It is estimated that it will take 40 hours for the total lift.

Lifting Procedure

The jacking system was designed, and its operation will be supervised, by a specialty firm in that field - The Pine Co. The jacks and jacking control system are now in place.

There are two pumping stations on each side with two pumps per system. The lifting rods are fitted with spherical self-aligning seats. The lift will be in 2-foot increments.

The jacks are equipped with a safety check valve at the jack which will hold the hydraulic pressure on the jacks. The jacks will operate at 5,600 psi during the lift. Their rated operating pressure is 11,000 psi with a bursting pressure of 25,000 psi. The burst pressure of the hydraulic hoses is 20,000 psi.

The jack system is equipped with an audio alarm system to warn if any rod is not carrying its load. The system could operate with only six of the eight jacks at each corner functioning. The lower lock nut will be kept near bearing throughout the lift.

The operation of the system can be reversed at any time. The Fine Co. will have a man on each back span throughout the lift.

The progress of the lift will be monitored by survey tapes from the center span to the lift platform. There will be five men at each corner to monitor the jacks and adjust the nuts. There will be four men on the top of the platform to remove the rod segments.

The extension time on the jacks is 10 minutes. Reset time is 7 minutes. The total time for one cycle of jack operation is 17-20 minutes. Plan on two cycles per hour. The initial lift off the barges will take longer.

Statistics

Span length - 902 feet
Span width - 81 feet
Span weight - 6,000 tons

So far as is known, largest previous operation of this nature involved lift of 1,100 tons.

Tolerances between river banks is very narrow so period during which anchors will be laid is a critical time.

Lifting will be done from above.

No person will be allowed on span during lift.

Total lift will be approximately 170 feet depending on water level.

The bridge was designed for the Oregon State Highway Division by the New York design office of Parsons, Brinkerhoff, Quade and Douglas.

Prime contractor for construction is Murphy Pacific Enterprises, Oakland, California.

Estimated cost is $28,686.705.

* * * * * * * *

Prepared By

OREGON STATE HIGHWAY DIVISION

People Involved With the Fremont Bridge

Oregon State Highway Division

George M. Baldwin, Administrator of Highways
F. B. Klaboe, State Highway Engineer
A. E. Johnson, Assistant State Highway Engineer
Walter J. Hart, Bridge Engineer
Robert O. Cunningham, Resident Bridge Engineer
Tom Edwards, former State Highway Engineer (retired)
Ivan D. Merchant, former Bridge Engineer (retired)

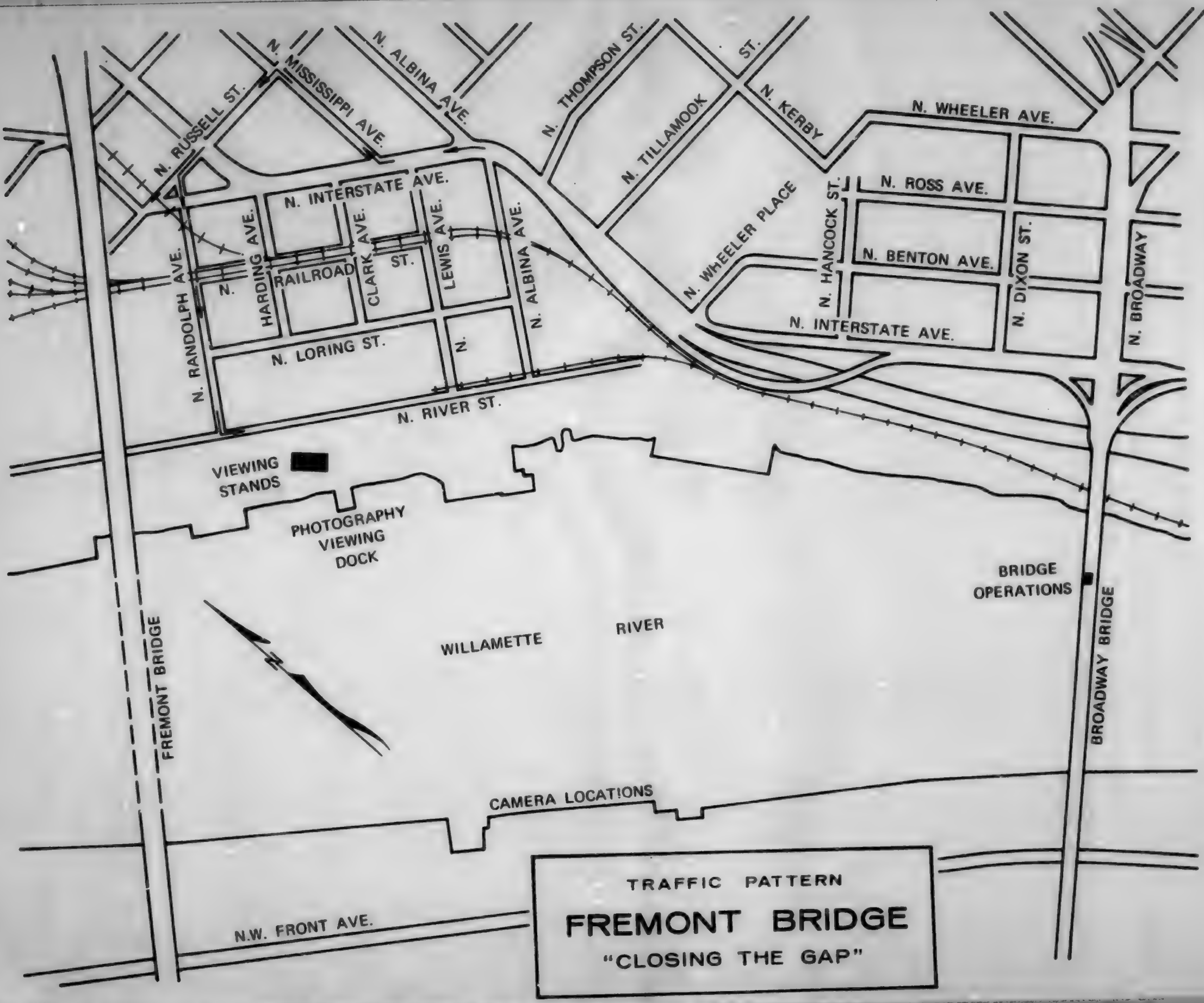
Murphy Pacific Corporation

Jay P. Murphy, President
Alpo J. Tokola, Project Manager
William A. Choate, Project Superintendent
Edward J. Wortman, Project Engineer
Lee Boswell, General Foreman

The Consulting Engineer for the steel erection is Earl and Wright Inc., with Richard A. Leber as Project Engineer.

Murphy Pacific Corporation and its predecessor companies, Judson Pacific Murphy, and Yuba Erectors, have constructed most of the major bridges in the western United States during the past 20 years. Among these bridges are:

The Dalles Bridge - Columbia River
Interstate Bridge - Columbia River
Richmond-San Rafael Bridge - San Francisco Bay
Benicia-Martinez Bridge - San Francisco Bay
San Mateo-Hayward Bridge - San Francisco Bay
Glen Canyon Bridge - Colorado River
San Pedro-Terminal Island Bridge - Los Angeles Harbor
San Diego-Coronado Bridge - San Diego Harbor
Queens Bridge - Long Beach, California
Bryte Bend Bridge - Sacramento River
Hood Canal Bridge - Seattle Harbor



TRAFFIC PATTERN

FREMONT BRIDGE

"CLOSING THE GAP"

I-405-8(17) DIFFENDERFER REPORT 1966
303 Fremont Bridge 1967
#7276 [redacted]

Effect upon Fremont Bridge
upon Railroad Operations

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

REPORT

EFFECT OF THE FREMONT BRIDGE UPON RAILROAD OPERATIONS

PORTLAND, OREGON

INTERSTATE HIGHWAY I-405

PREPARED FOR
STATE OF OREGON
DEPARTMENT OF HIGHWAYS

BY
JAMES W. DIFFENDERFER, P. E.

FEBRUARY 22, 1967

JAMES WILSON DIFFENDERFER -- 118 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

REPORT

EFFECT OF THE FREMONT BRIDGE UPON RAILROAD OPERATIONS

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JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

REPORT

EFFECT OF THE FREMONT BRIDGE UPON RAILROAD OPERATIONS

PORTLAND, OREGON

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BY
JAMES W. DIFFENDERFER, P. E.

FEBRUARY 22, 1967

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

22 February 1967

Mr. Forrest Cooper
State Highway Engineer
State Highway Department
State of Oregon
Salem, Oregon 97310

Attention: Mr. R. L. Porter

Gentlemen:

In accordance with your letters of July 12 and August 16, 1966, I am pleased to be able to submit to you this first portion of my report on "THE EFFECT OF THE FREMONT BRIDGE UPON RAILROAD OPERATIONS", dealing with the section on the west side of the Willamette River near the Stadium Freeway, where the proposed bridge affects the operations of the Spokane, Portland and Seattle Railway and the Portland Terminal Railroad near the crossing of N.W. 14th Avenue, and Thurman Street at N. W. Front Avenue.

This report shows that the proposed bridge pier and crossing location shown in the June 1966 plan adversely affect railroad operations and maintenance. Numerous alternative track layouts and crossing locations were studied, to determine the one which would best alleviate the problems and, thus, be most acceptable to the railroads at a minimum cost to the highway project. This study determined that other than the pier and the crossing relocation, the Fremont Bridge did not affect other railroad operations but simply used air rights or other portions of railroad-owned property leased to others, all of which matters could be settled by customary real estate acquisition procedures.

The crossing location problem and its accompanying increased maintenance costs can be alleviated by a relocation of the crossing and some slight revisions in the track layout, as recommended in this report. The proposed bridge pier definitely restricts sight distances for switching operations of the Spokane, Portland and Seattle Railway, which uses the tracks next adjacent to the proposed pier for switching at the present crossing location almost continually on a 24-hour basis.

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

One method of offsetting the restricted sight distance would be the addition of an added trainman on the railroad's yard switching crew, to pass signals around the curve where the proposed bridge pier has prevented direct sight between the engineman and the other yard crewmen in the vicinity of the yard office. This is a far from satisfactory arrangement, which could hardly be corrected by the use of an elaborate railroad radio system or by compensatory payments to the railroad for the added crewmen and slower switching operations. It would surely meet, as it undoubtedly has, with much opposition from the railroad and delay the bridge work. Costs for the added crewmen are estimated to be initially $26,000 annually, rising at a rate of 3% - 5% a year. At best, if a settlement could be reached, the capitalized cost would be somewhere between $400,000 and $500,000 without considering the costs of delays and added contingencies to the switching operations.

An alternative, which for all practical purposes eliminates the sight restriction problem for switching operations, is the construction of a new switching lead farther away from the bridge pier than the present track and extending westward to the crossing at N. W. 17th Avenue. The cost of this added track, including related turnout changes, crossing installation at N. W. 17th Avenue, pole relocation, etc., is approximately $46,000. This figure includes a 25% allowance for engineering and contingencies. Details are shown in items 1A, 1B and 1C of the Estimates for Alternate Railroad Layout "D".

Track layout changes necessary to permit relocation of the crossing without further damage to the railroads, and based on Alternate Railroad Layout "D", would cost about $15,125. Other costs related to construction of the new crossing and removal of the existing crossing are in some ways beyond the scope of this report but have been estimated for guideline purposes, because of their being so closely related to this total package. The crossing work would cost about $20,300 exclusive of warning signs and protective devices.

I trust that the details of this report will furnish you with all of the information and recommendations you need to complete this phase of the project. Though I had done considerable work on the east side problems, I will not proceed with the second portion of this report, as requested by your letters of September 15, 1966 and January 16, 1967, until so instructed by you.

Please let me know if you have any questions or desire further information. It has been a pleasure serving you.

Sincerely,

James W. Diffenderfer

James W. Diffenderfer, P. E.
Oregon No. 5280

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

13 May 1967

Mr. Forrest Cooper
State Highway Engineer
State Highway Department
State of Oregon
Salem, Oregon 97310

Attention: Mr. R. L. Porter

Gentlemen:

As the result of my conference at Portland on March 17 with Messrs. Klaboe, Johnson and Litchfield and my prior and subsequent studies, I am glad to be able to present to you the second portion of my report on the EFFECT OF THE FREMONT BRIDGE UPON RAILROAD OPERATIONS, covering the east side and the Union Pacific Railroad.

This section consists of pages 49 through 75 with an added table of contents, page 3a, covering this portion.

I hope that you will find it and my other services more than satisfactory and that the extended time for completing this, necessitated by my intervening trip to Japan and numerous other extended trips away from the Philadelphia area has not unduly dalayed completion of your project.

I stand ready to assist you in whatever way I may be able to serve you and thank you again for this opportunity of working with you and the fine group of men with whom I have had the pleasure of becoming acquainted in the Oregon State Highway Department.

Sincerely,

James W. Diffenderfer

James W. Diffenderfer, P. E.

Oregon No. 5280

RECEIVED
MAY 16 1967
OFFICE OF
STATE HIGHWAY ENGINEER
NOTED
R L PORTER

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

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APPENDIX - Plan of Recommended Railroad Layout

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

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JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

REPORT

EFFECT OF FREMONT BRIDGE UPON RAILROAD OPERATIONS

This report is an evaluation of the various problems associated with the construction of the Fremont Bridge of Interstate Route 405 over the Willamette River in Portland, Oregon, as it affects railroad operations.

This first portion of the report covers the problems on the west side of the river, involving the Spokane, Portland and Seattle Railway and the Portland Terminal Railroad Company.

PROBLEMS

Design SIC of the alternate designs for the Fremont Bridge, prepared by the engineering firm of Parsons, Brinkerhof, Quade and Douglas, provides for a stiffened tied arch with orthotropic upper deck and a 1250' main span. On the westerly side, there is a 445' span over the facilities of the Spokane, Portland and Seattle Railway (SP&S) and the Portland Terminal Railroad Company (PTRR). The westerly pier of this span is at the west edge of the SP&S yard and almost on the centerline of the present rail-highway grade crossing at the intersection of N.W, 14th Avenue, Thurman Street, and N.W. Front Avenue. This pier location requires relocation of the highway grade crossing over the tracks at that point.

The easterly pier of this span (or, the westerly main span pier) is to be located on SP&S property. Both the main span and this westerly span pass over the north end of the Columbia Basin Terminal, owned by the SP&S.

The purpose of this report is to determine the operating status of the affected properties and the effect of the new highway facilities and crossing relocation upon the operations of the SP&S and the PTRR.

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

CONSULTATIONS

For the first portion of this report, dealing with the west side problems, numerous consultations were had with the designated representatives of the following companies and agencies, whose cooperation and constructive criticisms have been appreciated and are hereby acknowledged:

SPOKANE, PORTLAND AND SEATTLE RAILWAY

Mr. Hal F. Moy, Chief Engineer
Mr. Guy E. LaSalle, Principal Assistant Engineer
Mr. G. S. Showalter, Assistant Superintendent
Mr. John Currie, Trainmaster

PORTLAND TERMINAL RAILROAD COMPANY

Mr. Jack H. Jones, Manager
Mr. Richard L. Thomas, Engineer
Mr. F. M. McKenchenie, Trainmaster

CITY OF PORTLAND, BUREAU OF TRAFFIC ENGINEERING

Mr. D. E. Bergstrom, Traffic Engineer
Mr. Marty J. Martini, Assistant

FINDINGS

SP&S WAREHOUSE TERMINAL BUILDING

This facility is shown as the Columbia Basin Terminal in Highway Department plans and as the SP&S Railway Dock on SP&S valuation plans. It is presently leased to Crown-Zellerbach, which has an agreement with the SP&S that C-Z will maintain the portions of the building that C-Z wants to use and the other portions of the building will not be maintained. C-Z uses the entire north end of the building over which the Fremont Bridge will pass and where the main span westerly pier would be located. The end of this building needed by the Highway Department is used mostly for office space at present. These offices could easily be relocated.

If C-Z were to vacate the building, SP&S will probably tear it down. The building is not operating property. With removal of the north end of the building, to make room for the bridge pier and clear the right-of-way below the bridge, there would be no undue interference with reasonable access to the building, as set forth in ORS 374.020. What access roadway would be needed to the building, could be provided with an easement. There should be no problem with the Highway Department's obtaining a fee title to the property, provided that the Railway holds such now, since such acquisition

would not interfere with railroad operations or continuing use of or access to the building.

There should also be no problem from an operating standpoint with the small strip of peroperty which the Highway Department would need from N.W. Front Avenue to the building, as the Railway has no real use for it.

Except during construction, the Fremont Bridge will in no way interfere with the SP&S yard on the river side of N.W. Front Avenue.

PORTLAND TERMINAL RAIIROAD COMPANY YARD

Four of the tracks in the present crossing at Thurman Street and N.W. Front Avenue, which will be underneath the Fremont Bridge are owned by the Portland Terminal Railroad Company. This railroad is owned 20% by the Southern Pacific, 40% by the Northern Pacific, and 40% by the Union Pacific. Another track of this railroad which will be under this particular bridge span, crosses N.W. Front Avenue at this location, to service the Portland Public Docks. Two of the four tra cks in the present crossing are main tracks leading to the Portland Union Station. Revenue and dead-head movements of passenger train equipment are made largely on these two tracks. The PTRR uses the other tracks to serve industries along the waterfront and to get access to 13th, 15th, Upshur, Wilson, Roosevelt, and York Street Tracks via the SP&S. It conducts no switching operations in the vicinity of the Fremont Bridge crossing, other than as necessary to serve the Public Docks.

SPOKANE, PORTLAND AND SEATTLE RAILWAY YARD

The SP&S yard operations are a much different matter in the vicinity of this crossing and the Fremont Bridge location. This yard serves at least four major functions at present:

1. Classification of trains for local industries.

2. Receipt and dispatching of road trains from and to the Oregon Electric.

3. Puller movements of freight cars to and from SP&S yards at Vancouver, Wash.

4. Traffic to and from Guilds Lake Yard, several miles to the north.

Movements over the four SP&S tracks in the crossing (including one turnout located in the crossing) are almost constant during the day and night, except when yard crew s are being relieved or are at lunch. To protect highway tra ffic there are two crossing watchmen on duty during the two daylight tricks and one at night. The SP&S watchman on the west side is on duty from 6 a.m. - 2p.m. and 2 p.m.- 10 p.m. The PTRR has watchmen on duty between 8 a.m. and 12 midnight.

The worst part of this situation is that the SP&S does all of its switching for its yards over this crossing, primarily on the two westerly tracks.

It should be noted that the future status of the SP&S yard is dependent upon the success of the SP&S in moving all of its road functions, including those to and from the Oregon Electric, to its yards at Vancouver, Wash. Primarily dependent upon success in the

negotiations with the railroad unions, this move is expected to be made sometime in 1967 or 1968. It would eliminate all of the road crew moves into this Portland yard, most of the switching movements over the crossing (since these today are primarily engaged in handling cars of the road and puller movements), and most of the puller trains. Movements are intended to be made directly from the Oregon Electric and Guilds Lake over the Willamette River Bridge (owned 2/3 SP&S, 1/3 NP) to the SP&S Vancouver yard. In addition to agreements with the brotherhoods, the SP&S will have to build a connection from its Oregon Electric route to the SP&S-NP Willamette River bridge. This item has been included in the SP&S 1967 Capital Budget.

This information is included as a matter of record, should Fremont Bridge construction be delayed for any reason, since the rail operations would be greatly reduced and the impact of the bridge upon them changed, to the extent that they would have to be restudied, after the change in railroad operations went into effect.

For the purposes of this study and to be conservative in an evaluation of the Fremont Bridge's impact upon railroad operations, it is necessary to consider that the bridge will affect rail operations as they are presently conducted. This would reflect the maximum obligation for which the Highway Department should be liable.

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

EFFECT OF OVERHEAD BRIDGE SPANS UPON RAIL OPERATIONS

Except for the period during construction, when bridge work would be conducted insofar as possible between railroad movements, and protected accordingly by flagmen and railroad operating personnel, the existence of the overhead bridge spans, as planned for the Fremont Bridge will not adversely affect operations of either the SP&S or the PTRR. There are enough gaps in operations on PTRR tracks, to permit construction work periods of reasonable length, to erect steel, without interference with or delay to PTRR operations. Because of the heavy switching movement on the SP&S, construction work would have to be scheduled more closely, but would appear to be accomplished most feasibly when crews are changed about 8 a.m., 4 p.m., and midnight.

Use of the air space for the bridge span (exclusive of piers) would be purely a real estate matter, involving acquisition of air rights or an aerial easement, which would in no way adversely affect operations of either railroad.

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JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

EFFECT OF 14TH AND THURMAN PIER LOCATION

Page 12 shows the location of the westerly pier of the span immediately west of the main span, and its relationship to the four SP&S tracks.

Page 13 shows the "blind" areas for switching operations caused by existing sight restrictions, which are created primarily by numerous utility poles, a crossing watchman's watchbox of relatively low profile, and the resturant building at the corner of N.W. 14th Avenue and Thurman Street. While the watchbox restricts sight at the level of the rail, yard train crew men can readily pass signals to the enginemen by sighting over the watch box, because of the greater height of all of the locomotive cabs.

One switch tender is responsible for throwing several of the SP&S switchings in the immediate vicinity of the crossing. Otherwise, SP&S yard train crew men are generally stationed at the switch locations indicated as points A, B, and C on Page 13, to throw switches and pass signals to the locomotives, which are always at the north end (near the crossing) of the strings of cars being switched.

The effect of the bridge pier upon these switching operations is shown pictorially on Page 14, taken looking northward toward the crossing from several locations in the vicinity of the position of the yard train crew men working on the ground. The bridge pier has been superimposed upon the photographs. As shown graphically on Page 15, the pier reduces the area of sight by at least 150 feet.

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
165 BROADWAY : NEW YORK 6, N. Y.

JUN 15 1966

N

℄ PIER 2W
FB³ 367+7.0
outline of footing

16'± clear to
℄ of track

85'-0"

91'

37'-3"

39'-6"

Top of Base
5'± above
ground line

Pier Shaft

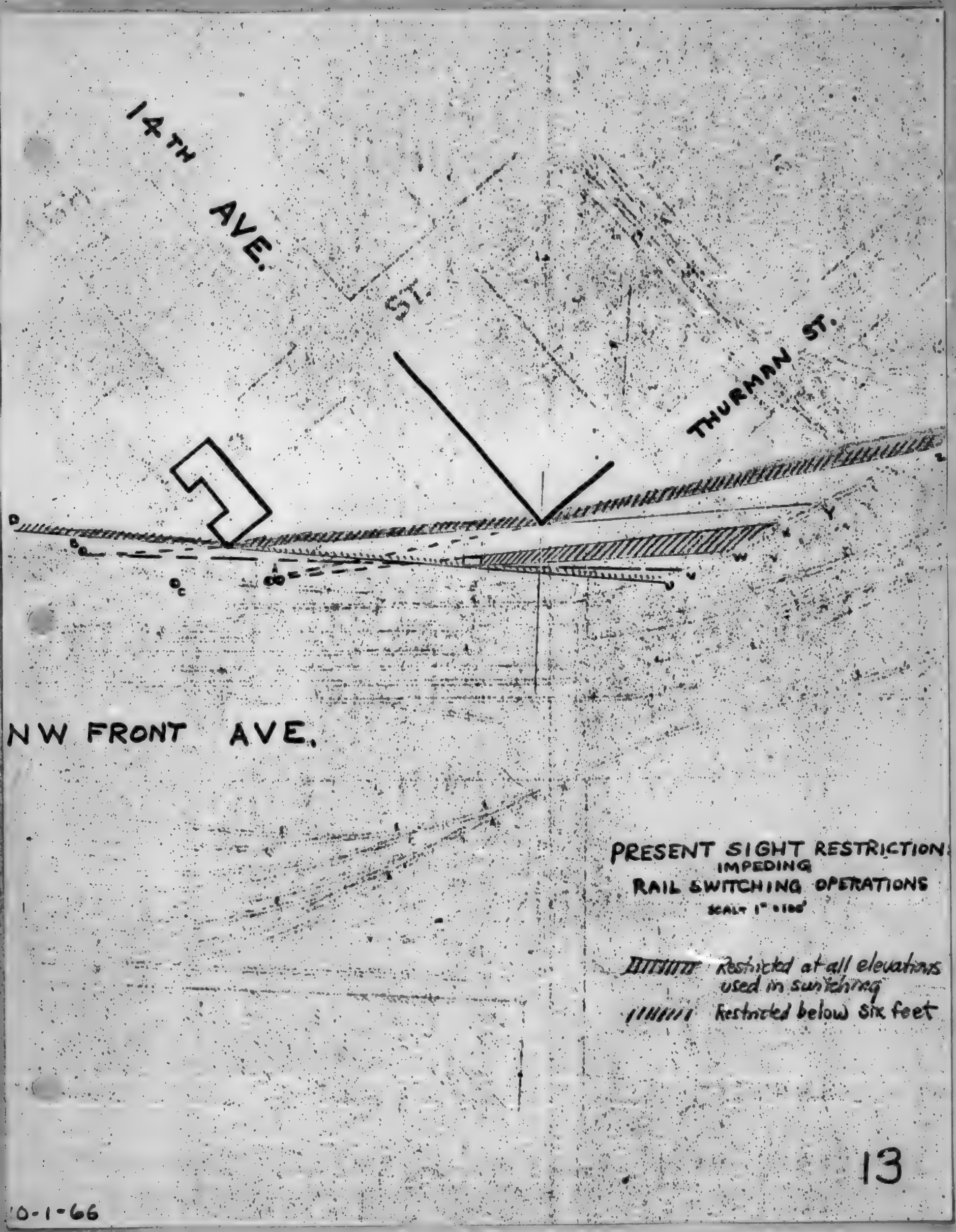
15'

35'-0"

FREMONT BRIDGE
PORTLAND, OREGON

Railroad Clearance At Pier 2W
DESIGN SIC - (57'-0" ROADWAY)
Scale: 1"=50'
SKETCH Nº 1

12



PRESENT SIGHT RESTRICTION IMPEDING RAIL SWITCHING OPERATIONS

SCALE 1" = 100'

▨ Restricted at all elevations used in switching

▧ Restricted below six feet

10-1-66

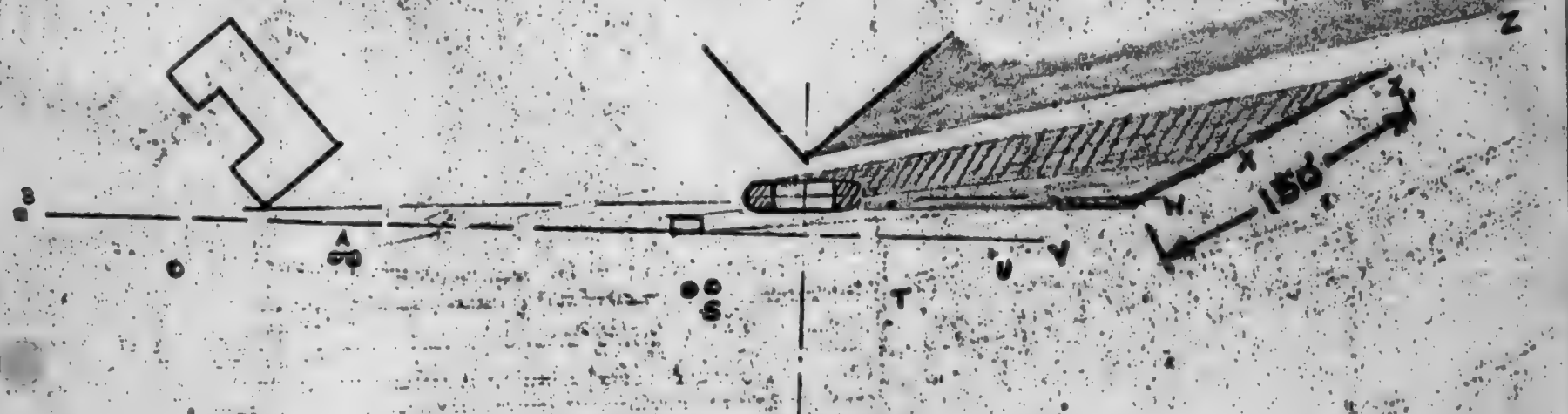
EFFECT OF BRIDGE PIER UPON RAILROAD OPERATIONS

LOOKING WEST
FROM
CROSSOVER SWITCH
ON 30-YARD LEAD
AT WEST END OF LADDER

LOOKING WEST
FROM
WEST END OF
MIDDLE YARD LEAD

14TH AVE.

THURMAN ST.



NW FRONT AVE.

ADDED SIGHT RESTRICTIONS
TO
RAIL SWITCHING OPERATIONS
IMPOSED BY
FREMONT BRIDGE PIER
SCALE 1" = 100'

Restricted at all elevations used in switching

10-1-66

Most of the SP&S switching operations are conducted on the second track from the proposed pier, on what is known as the "Middle Lead". Occasionally, when movements are being made across this track from the SP&S yard to the SP&S main track, the switching work is carried out on the track immediately adjacent to the pier, known as the "30-Yard Lead". The effect of the pier upon switching operations has been considered with respect to switching on the Middle Lead, because that is where most of the work is conducted, although it must be recognized that the presence of the pier at its proposed location would even more adversely affect sight distances for any switching work being done on the 30-Yard lead.

Studies were made during weekday periods in August 1966, to determine the pattern of SP&S switching operations. These are shown for sample periods of the day of Page 17. Refering to locations lettered in the sketches on Pages 13 and 15, the table on Page 17 shows the location north of the yard area to which the switching locomotive moved on each movement made by switching drafts. Twenty-seven per cent (27%) of the movements terminated clear of the crossing. The balance of them blocked the crossing. Sight restrictions caused by the proposed bridge pier would have affected nineteen per cent (19%) of the switching drafts, indicated as moving to or beyound location "W". It should be noted that less than ten per cent (10%) of the movements were made on the 30-Yard Lead.

There is no question that the proposed pier would adversely affect rail switching operations. The adverse effect could be offset

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

SIGHT DISTANCE STUDY

Rail Switching Movements at N. W. 14th Avenue and Thurman Street

August 1966 Weekday

Highway Traffic Period	Number of Switching Drafts on 30-Yard or Middle Leads to Location S	T	V	W	Total Draft	Max. Cars Per Draft	Drafts by Track 30-Yard	Middle	Total
Morning Rush Hour									
6.45-7.00	1	4	-	1	6	10	-	6	6
7.00-7.15	2	-	1	-	3	11	-	3	3
7.15-7.30	-	-	1	2	3	11	1	2	3
7.30-7.45	1	1	-	-	2	-	-	2	2
7.45-8.00	-	-	-	-	-	-	-	-	-
8.00-8.15	-	-	-	-	-	-	-	-	-
8.15-8.30	1	2	-	1	4	12	2	2	4
Noon Period									
12.00-12.15	1	1	1	-	3	5	-	3	3
12.15-12.30	1	1	1	2	5	10	-	5	5
12.30-12.45	-	1	-	-	1	8	-	1	1
12.45-1.00	-	1	1	-	2	10	-	2	2
1.00-1.15	-	-	1	-	1	15	-	1	1
Evening Rush Hour									
5.00-5.15	1	2	-	-	3	8	-	3	3
5.15-5.30	1	-	-	-	1	-	-	1	1
5.30-5.45	-	-	1	1	2	15	-	2	2
5.45-6.00	1	-	-	-	1	-	-	1	1
4-Hour Total	10	13	7	7	37		3	34	37
Distribution	27%	35%	19%	19%	100%				

by the addition of another yard train crew man, to at least one switching crew on each trick, to pass signals around the curve where the proposed bridge pier would prevent direct sight between the engineman and other yard crew members at the various switches east (or south) of the crossing in the vicinity of the SP&S yard office. This is a far from satisfactory arrangement, since it slows switching operations by requiring the passage of another set of hand signals and injects further possibilities of error in transmission of signals. An elaborate radio system for switching work exclusively, in addition to channels which the railroad already has, would help alleviate the problem, in a ddition to compensatory payments to the railroad for the added crewmen and slower switching work. Costs for the added crewmen alone are estimated to be $ 26,000 a year initially and would rise, on the basis of present experience, at the rate of 3% to 5% a year. If a settlement could be reached, the capitalized cost would be somewhere beteen $400,000 and $500,000 exclusive of the costs of delays and added contingencies to the switching operations. Such an approach would undoubtedly meet with much opposition from the railroad.

Relocation of the pier twenty feet (20') farther away from the proposed location would essentially eliminate any railroad operating problem attributable to the Fremont Bridge, but would, of course, raise bridge costs.

The alternative, discussed later, is to provide a relocated switching lead, to extend the sight distance for switching operations.

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

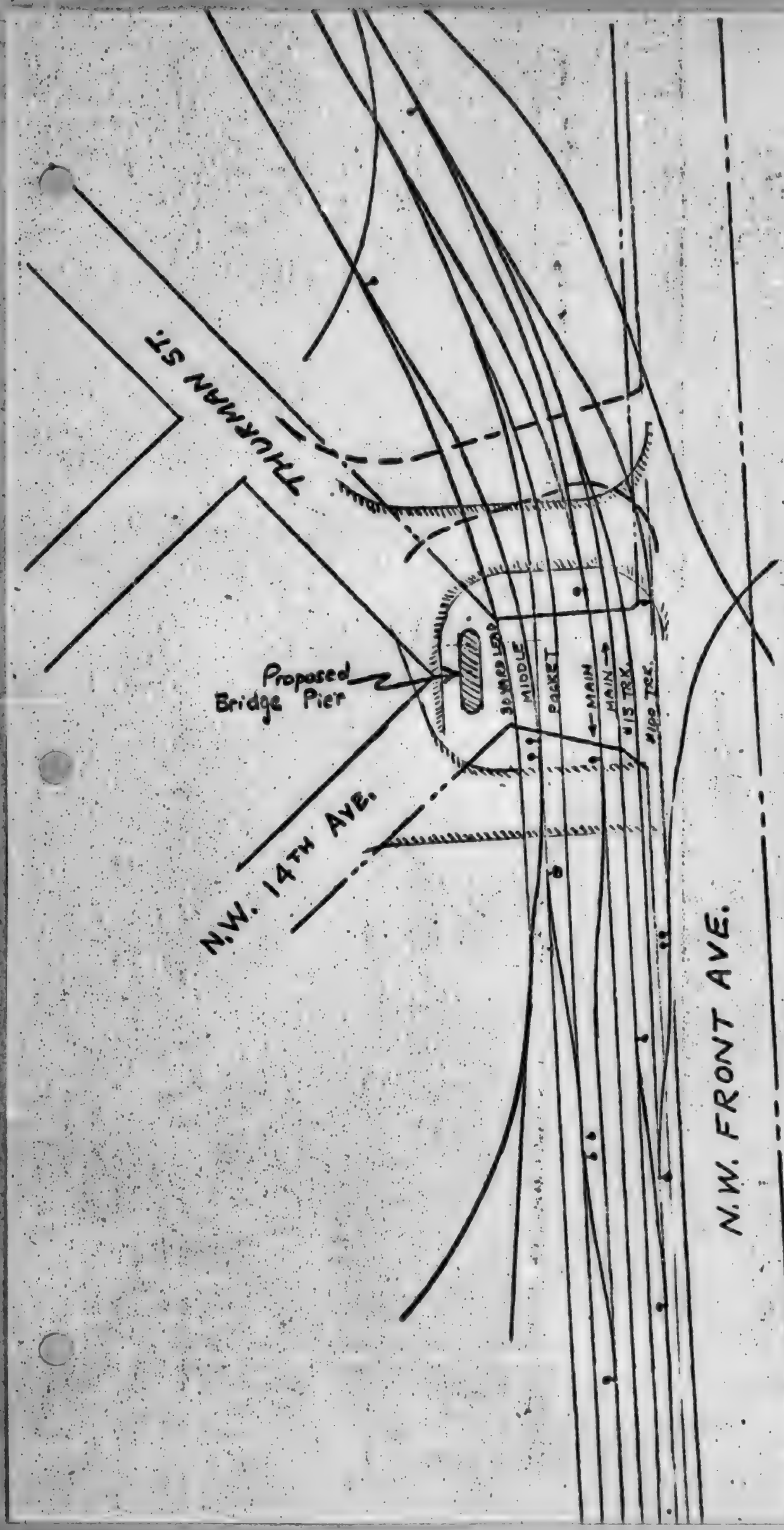
EFFECT OF PROPOSED CROSSING LOCATION

Construction of the bridge pier at 11th and Thurman requires that the street crossing over the railroad at this point be relocated. The present track layout with the location of the proposed pier is shown on Page 20. The more important tracks are named. The SP&S Tracks in the crossing are the 30-Yard Lead, the Middle Lead, and the Pocket. The Middle Yard lead track has a switch located throughout the width of the crossing, leading eventually to the SP&S main track. Other tracks in the crossing belong to the PTRR.

This situation is far from ideal, but one which both rail and highway traffic have apparently tolerated for a long time. The total crossing involves eight tracks, including one turnout, Constant train movements on the tracks of both railroads delay highway traffic, the magnitude of which is a deterrent to efficient rail operations.

Numerous alternative have been and could be proposed as solutions to the crossing relocation problem.

One proposal considered relocating the crossing south of the present location (toward downtown Portland). Aside from the highway traffic flow problems that this location might create, it would place the crossing even more in the midst of the SP&S switching operations. Furthermore, there would be at least two turnouts within the limits of the paving in the crossing. Turnouts so located are most costly from the standpoint of both initial and continuing operating and maintenance costs. While the turnout on the inbound main track could be relocated, the crossover on the Middle Yard Lead is so strategically located that it could not be shifted. The intensity of the SP&S



PRESENT RAILROAD LAYOUT

RECOMMENDED SITE

WITH TRACK REVISIONS SHOWN ON OTHER SKETCHES

ALTERNATE WEST

CROSSES 10 TRACKS
INCLUDES 2 SWITCHES

PRESENT CROSSING

CROSSES 8 TRACKS
INCLUDES 1 SWITCH

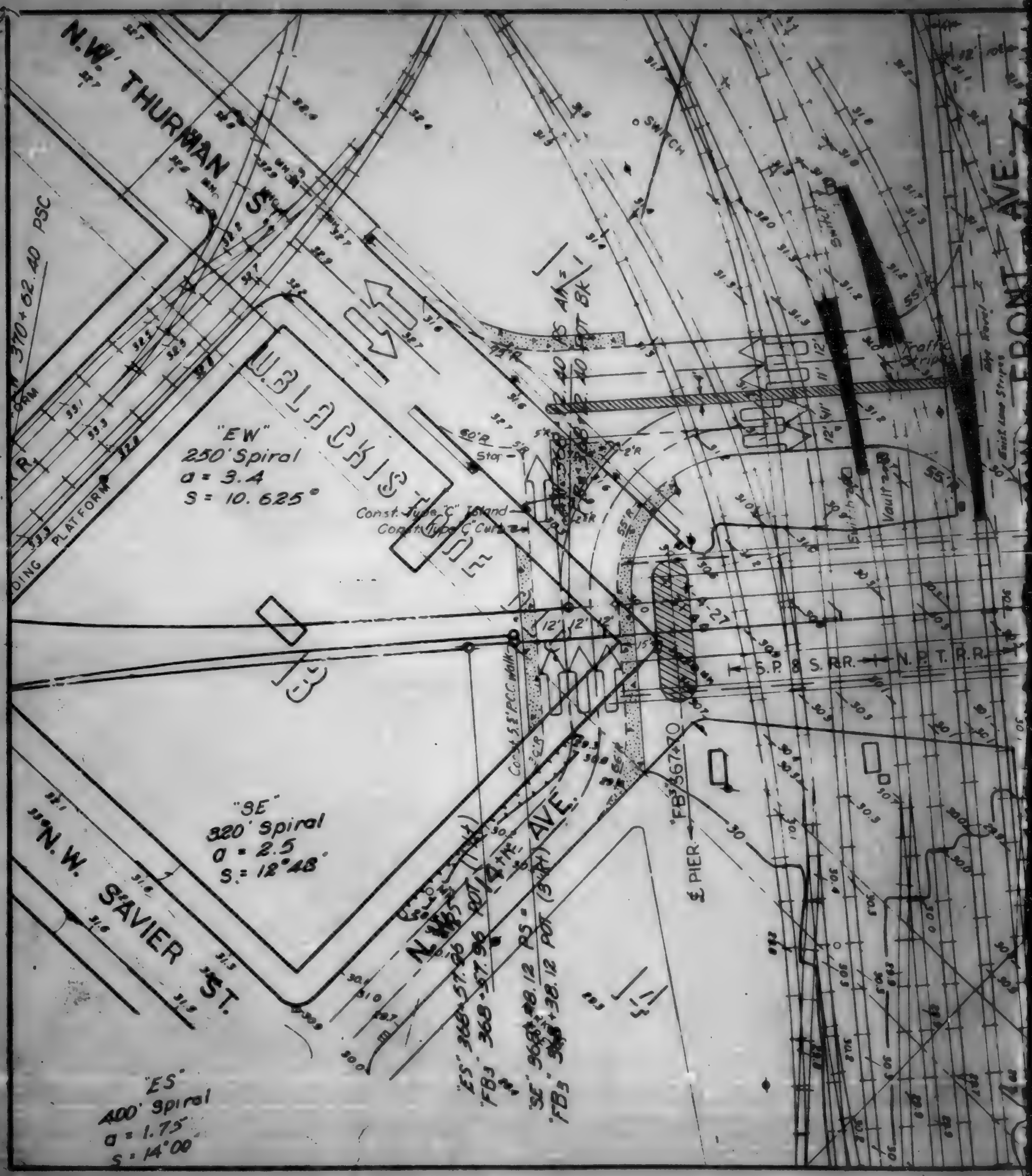
ALTERNATE EAST

CROSSES 9 TRACKS
INCLUDES 3 SWITCHES

switching movements, practically all of which would be blocking a crossing at this location, make relocation to this site impractical.

Another proposal is contained in the State Highway Department Plan dated June 1966. It is included as Page 22. This relocates the crossing to the north. It provides for a crossing generally 50' wide with two lanes of highway traffic in each direction. The track layout would be a s at present. With this scheme, there would be a total of ten tracks in the crossing, two more than at present. There would alsc be two complete turnouts and a portion of a third one, all indicated in red. This would be most objectionable from a railroad opera ting standpoint and most objectionable from a cost standpoint to construct and maintain. The additional number of tracks to be crossed would make crossing protection even more difficult for the railroad and would make highway travel over the crossing that much more hazardous.

If possible, it would be preferable to reduce the number of tracks in the crossing from the eight there are today. At least, to avoid damage to the railroad, there should be no more. Studies made in connection with this report were aimed at so aligning the crossing and rearranging the tracks, to achieve this goal. Studies of the rail traffic at this crossing, briefly tabulated as to switching movements on Page 17, revealed that about 38% of the moves would still block the crossing as in the June 1966 plan, but that this could be reduced to about 19% if the crossing were moved a little farther north.


N.W. THURMAN ST.
N.W. SAVIER ST.
N.W. FRONT AVE.
BLACKS
"EW"
250' Spiral
a = 3.4
S = 10.625°
"SE"
320' Spiral
a = 2.5
S = 12°48'
"ES"
400' Spiral
a = 1.75
S = 14°00'
370+02.40 PSC
SWITCH
Const. Type "C" Island
Const. Type "C" Curb
Const. 5.5' P.C.C. Walk
S.P. & S. R.R.
N. P. T. R.R.
℄ PIER
"FB3" 367+90
Traffic Stripe
Vault
PLATFORM

D-30-18

N.W. FRONT AVE.

Fremont Bridge

RAMP

T. R. R.

SWITCH

PA - ING

OREGON STATE HIGHWAY DEPARTMENT
METROPOLITAN DIVISION

PROPOSED R.R. CROSSING
N. W. 14th & THURMAN ST.
WEST FREMONT INTERCHANGE

Metro Engr. A. E. JOHNSON Date June 1966

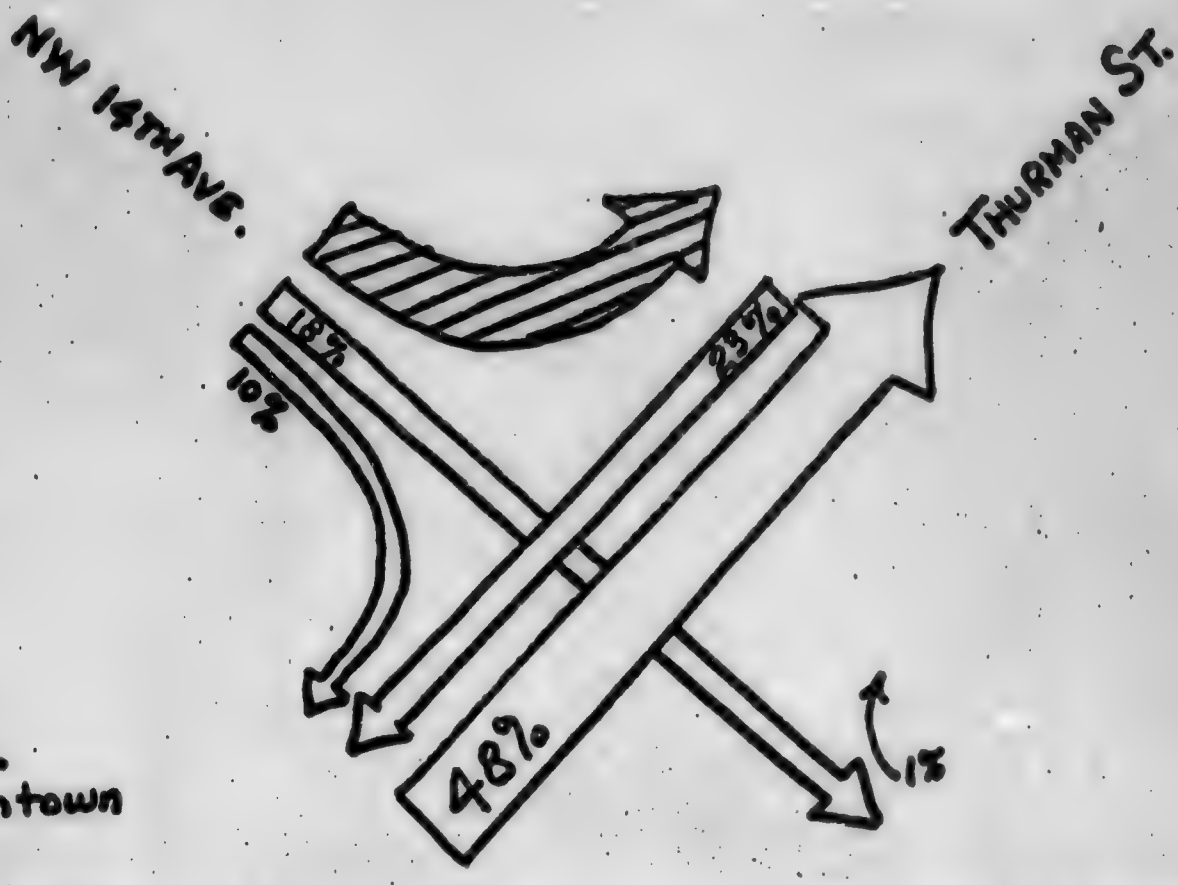
Scale 1" = 50' By

22

For this reason, studies we re made for a crossing site approximately fifty feet farther north than the site in the June 1966 plan. The general location is shown in dashed lines on Page 20. While it would be a longer crossing, it would be located beyond at least 80% of the sw itching movements as presently made by the SP&S. The site is so situated as to permit track changes which would remove all turnouts from the crossing paving area and reduce the number of tracks to no more than presently in the crossing. This would reduce construction and maintenance costs and avoid damaging rail operations.

The effect of the crossing location and the pier upon highway traffic was studied, since the railroad is often held liable for crossing accidents, and would be damaged by any pier and crossing location making highway travel over the crossing more hazardous. The pier location and the crossing in the June 1966 plan would have meant that traffic moving over the crossing from N.W. 14th Avenue would have had to have the front of the vehicle almost on the nearest track before getting a clear view of rail traffic moving from the SP&S yard. Thus, a better sight distance is needed for the highway traffic as well as the rail switching movements.

The nature of today's highway traffic was studied. The directional flow is summarized in chart form on Page 24, based upon samples taken during weekdays in August 1966, details of which are shown on Page 25. The crossing problem is accentuated by the fact that not only merging but also weaving movements of considerable magnitude are taking place right on the railroad tracks as vehicles move over the short crossing.



RELATIVE DISTRIBUTION
OF HIGHWAY TRAFFIC
OVER RAILROAD CROSSING
AT NW 14TH AVE. & THURMAN ST.

AUGUST 1966
WEEKDAYS

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

HIGHWAY TRAFFIC DISTRIBUTION

NW Front-Thurman-NW 14th
Sample Periods
Weekday-August 1966

Highway Traffic Period	Front West to Thurman	Thurman to Front West	Thurman to Front East	14th to Front West	14th to Front East	Front East to Thurman
Morning Rush Hour						
6.45-7.00	-	-	4	22	4	48
7.00-7.15(b)	-	-	2	6	-	28
7.15-7.30	-	-	4	18	2	55
7.30-7.45(a)	-	-	14	19	9	66
7.45-8.00	1	-	6	28	4	78
8.00-8.15	-	-	17	12	12	35
8.15-8.30	-	-	5	11	1	25
Noon Period						
12.00-12.15(c)	4	-	13	6	8	16
12.15-12.30(a)	1	-	10	6	3	9
12.30-12.45	4	2	16	5	11	10
12.45-1.00	-	1	16	12	6	12
1.00-1.15	-	-	20	11	3	11
Evening Rush Hour						
5.00-5.15	Crossing Blocked					
5.15-5.30	-	-	44	12	16	28
5.30-5.45	2	-	23	4	9	18
5.45-6.00	-	-	25	3	6	14
4-Hour Total	12	3	219	175	94	453
Distribution	1%	-	23%	18%	10%	48%

(a) Crossing blocked for 3 consecutive minutes.
(b) " " " 4 " "
(c) " " " 5 " "

Weekdays-Wed. 8-10-66 Thurs. 8-11-66

The flow of traffic between Thurman Street and the downtown portion of N.W. Front Avenue accounts for more than 70% of the total traffic over the crossing. This heavy flow must weave and conflict with a flow of traffic moving at right angles to it, from N.W. 14th Avenue to the outbound (or, northwesterly) direction on N.W. Front Avenue.

Further details of the traffic flow at this crossing throughout the day are given in the traffic counts on Page 27, made February 25, 1964 and obtained from the City of Portland's Bureau of Traffic Engineering. The peaking nature of the highway traffic at this location is further confirmed by the graph on Page 28, showing hourly fluctuation for a typical weekday, and the chart on Page 29, showing the daily fluctuation by days of the week, measured in terms of per cent of average weekday traffic. These show that, while the peak hours of highway traffic in this area occur when SP&S switching movements have been scheduled to be at a minimum by virtue of crew changes in the yard about 8 a.m. and 4 p.m., the highway volume is of considerable magnitude during the rest of the daylight hours between 6 a.m. and 6 p.m., Mondays - Fridays, and represents a very real problem to rail operations and the solution of the bridge pier and crossing location problems.

A traffic flow count for the evening peak hour in 1962, is shown on Page 30, as information

While not within the scope of this assignment, it is obvious that consideration must be given to design of traffic flow over the

RCS

TRAFFIC COUNT TAB

Date 2/25/64
Day TUESDAY
Weather FAIR

ON N. M. THURMAN
W/N.W. 14th Avenue

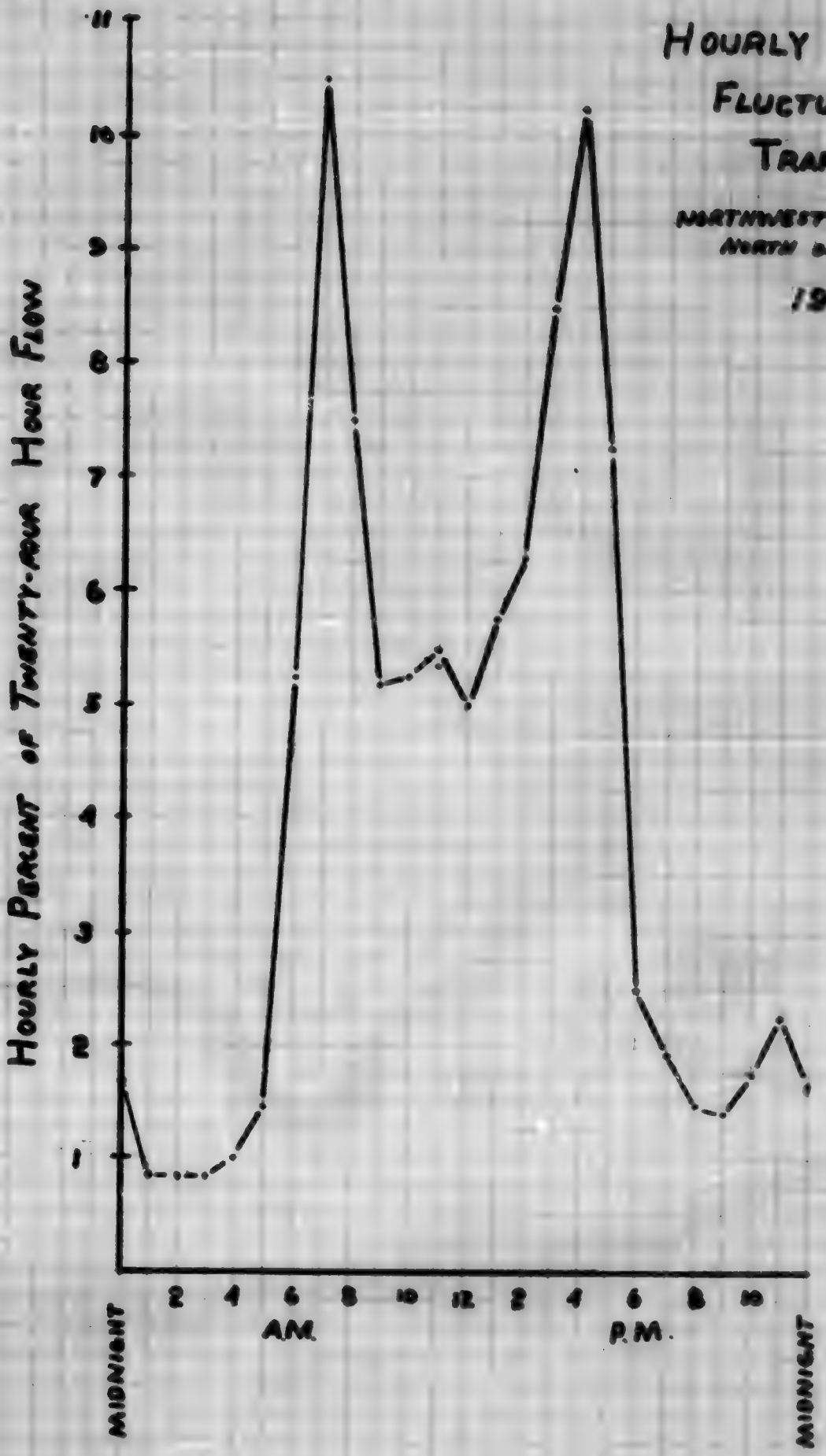
ON N. W. 14TH AVENUE
N/Thurman
S/Thurman

TIME \ DIRECTION	EB (1)		TOTAL WB (2)	WB from NW Front Ave	N/Thurman W. LANE NB (3)		S/Thurman E. LANE EB (4)	
A.M. 7-8	38		749	218	531		127	
8-9	36		416	129	287		80	
9-10	36		240	88	152		82	
10-11	46		207	76	131		110	
11-12	91		275	104	171		103	
P.M. 12-1	72		187	62	125		85	
1-2	61		333	162	171		125	
2-3	64		327	132	195		111	
3-4	82		304	108	196		85	
4-5	115		350	145	205		99	
5-6	126		220	73	147		57	
6-7	56		92	39	53		21	
7-8	24		70	33	37		11	
8-9	32		68	37	31		20	
9-10	18		72	41	31		22	
10-11	21		72	36	36		28	
11-12	14		58	25	33		21	
A.M. 12-1	21		37	14	23		8	
1-2	5		26	21	5		7	
2-3	6		23	17	6		15	
3-4	5		23	9	14		4	
4-5	5		57	38	19		12	
5-6	8		71	31	40		18	
6-7	14		354	104	250		92	
TOTAL	996		4631	1742	2889		1343	
GRAND TOTAL		5627				4232		

HOURLY FLUCTUATION OF TRAFFIC FLOW

NORTHWEST FRONT AVENUE
NORTH OF 17TH AVENUE

1962



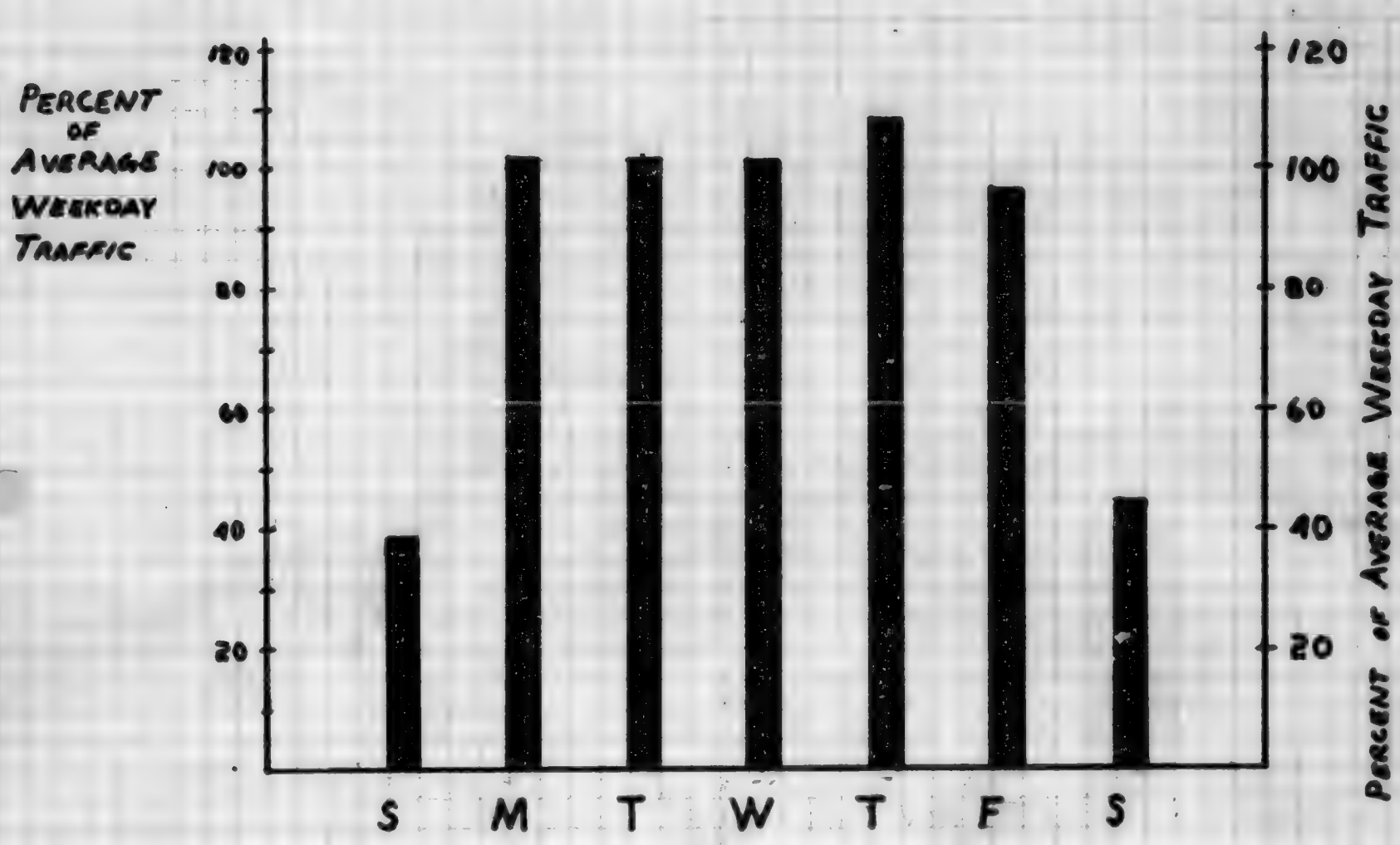
DATA FROM PHASE I REPORT

PREPARED FOR MARYLAND
COMMISSION OF PUBLIC DOCKS
JANUARY 4, 1963

Daily Fluctuation of Traffic Flow

Northwest Front Ave. North of 17th Ave.

1962



Data from Phase I Report

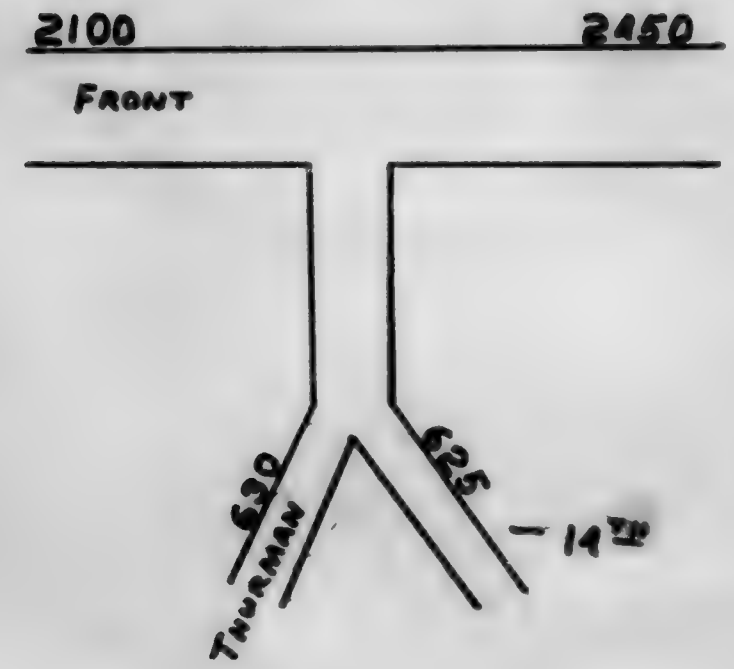
Prepared for Portland

Commission of Public Docks

January 4, 1963

PEAK HOUR TRAFFIC FLOW

4:00 - 5:00 P.M.

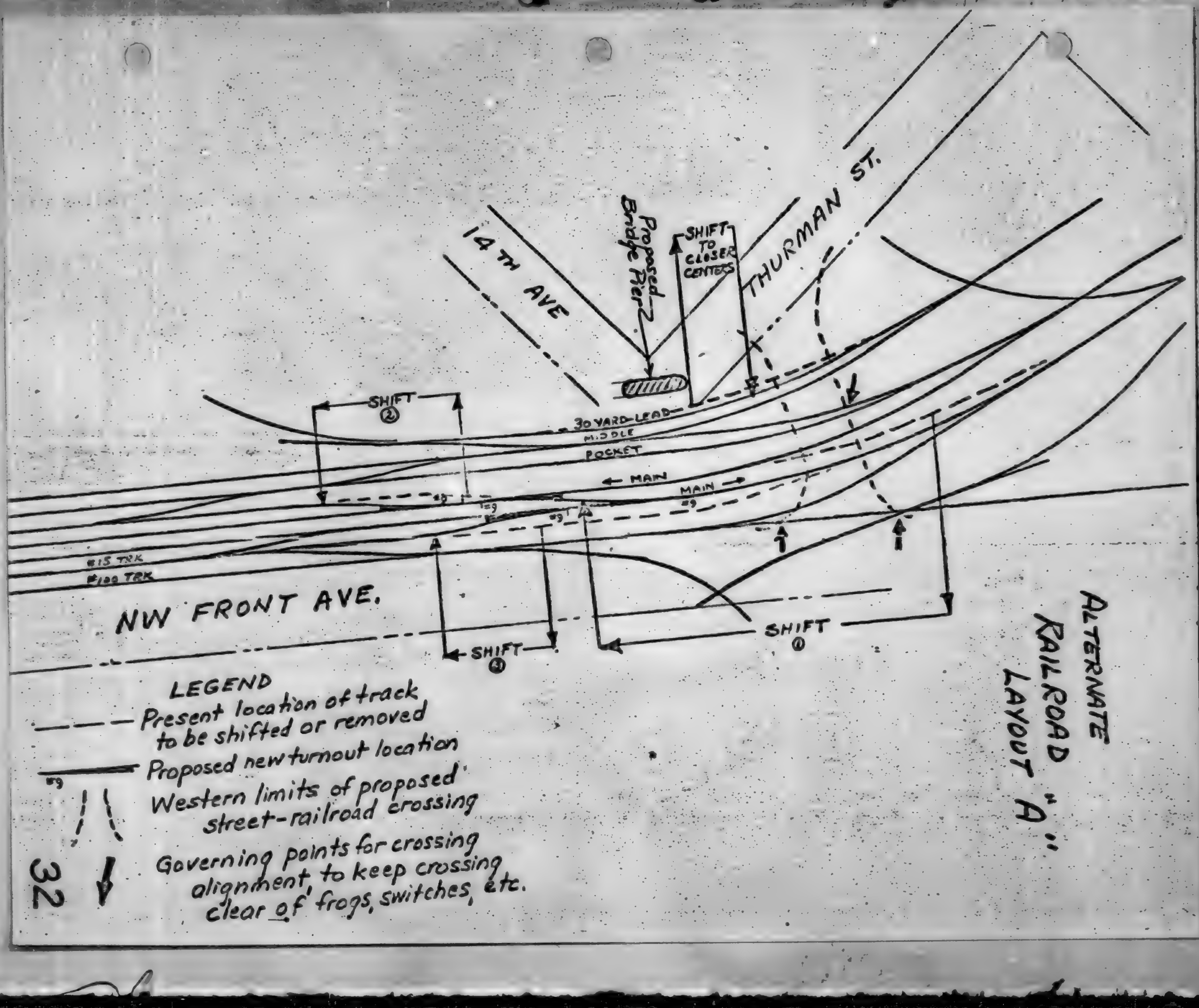


1962 TRAFFIC FLOW · NORTHWEST
FRONT AVENUE

DATA FROM PHASE I REPORT
PREPARED FOR PORTLAND
COMMISSION OF PUBLIC DOCKS
JANUARY 4, 1963

crossing, to avoid damaging the railroad by increasing the possibility of crossing accidents and the railroads' concurrent liabilities. Any design considered should aim to reduce the need for weaving and merging on the crossing. It should also provide a reservoir for traffic at each edge of the crossing, away from active switching and main tracks, especially, for any traffic awaiting access to N.W. Front Avenue or moving from Thurman Street. Fewer, well-channelled lanes over the crossing would seem to be preferable, in the interest of reducing conflict with rail movements. Some sample possibilities are shown later in the report.

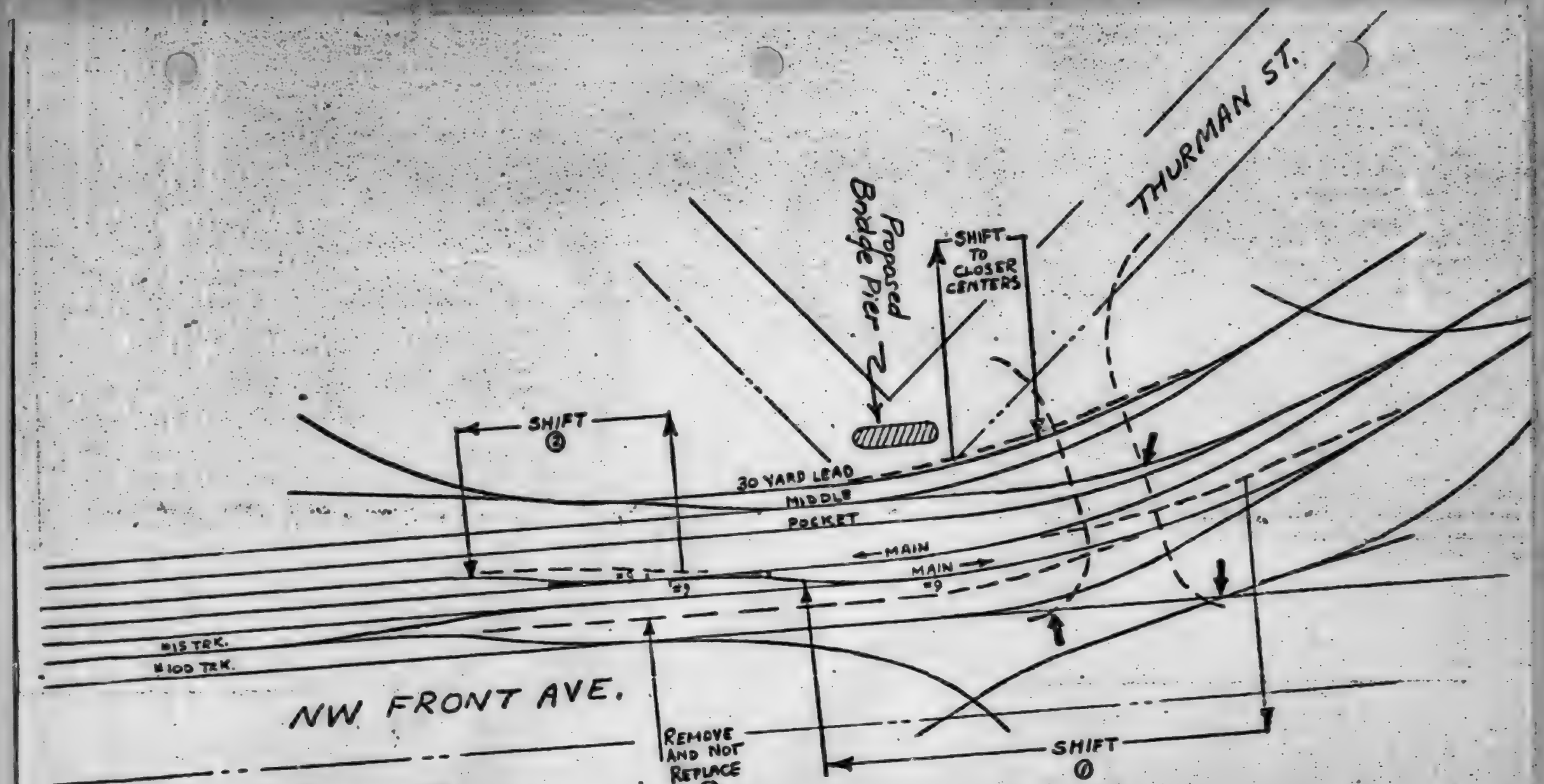
A number of alternative track layouts were studied for the more desirable crossing location farther north than the one in the June 1966 plan, since it was necessary to relocate tracks for a crossing in this location, not only to reduce the number of tracks to a quantity no greater than that which exists in the present crossing, but also to avoid having any turnouts within the crossing. Some of these are shown on Pages 3 2, 33, and 34. The one most preferred from the railroad standpoint was Layout "C" on Page 34. Minimum costs for the track work, exclusive of crossing construction, protection and warning devices, relocation of certain facilities, etc., are estimated on Page 35. To test the feasibility of this location and layout from a highway traffic standpoint, certain traffic lane configurations were sketched as shown on Pages 36, 37 and 38.



ALTERNATE RAILROAD "A" LAYOUT

LEGEND

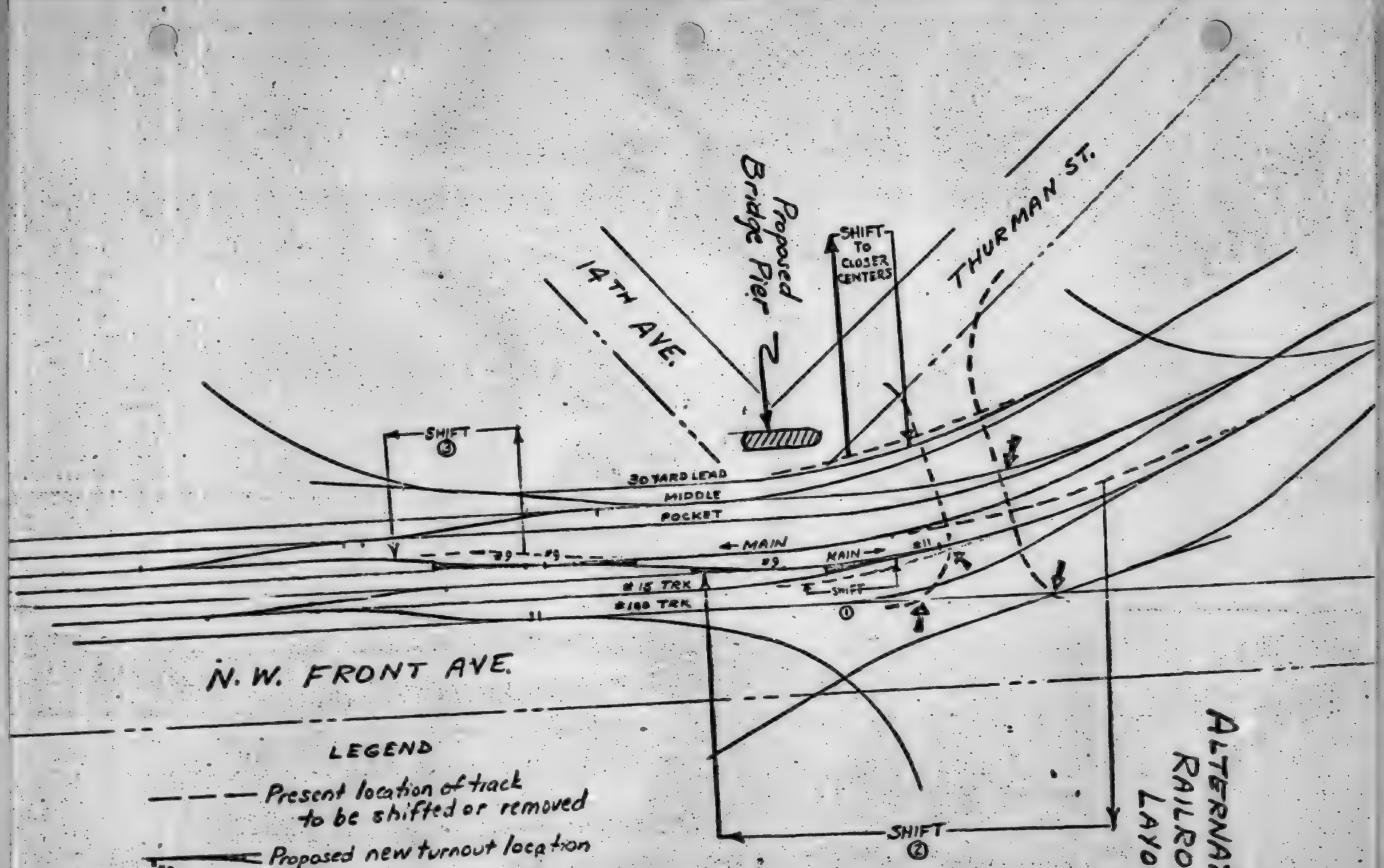
- Present location of track to be shifted or removed
- Proposed new turnout location
- Western limits of proposed street-railroad crossing
- Governing points for crossing alignment to keep crossing clear of frogs, switches, etc.



LEGEND

- Present location of track to be shifted or removed
- Proposed new turnout location
- #9 Western limits of proposed street-railroad crossing
- Governing points for crossing alignment, to keep crossing clear of switches, frogs, etc.

ALTERNATE RAILROAD LAYOUT "B"



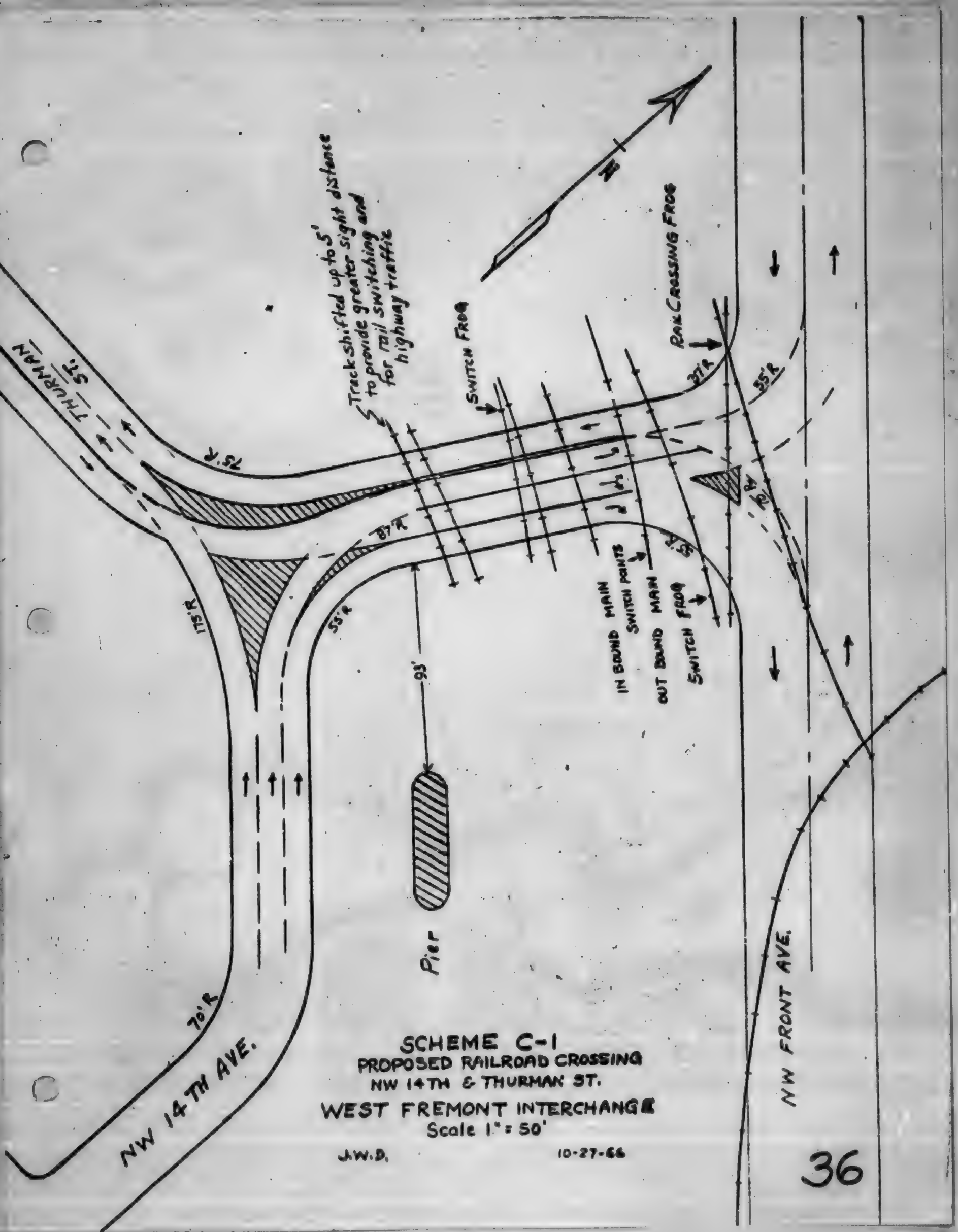
ALTERNATE RAILROAD "C" LAYOUT "C"

JAMES WILSON DIFFENDERFER -- 118 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

ESTIMATES
FOR
ALTERNATE RAILROAD LAYOUT "C"

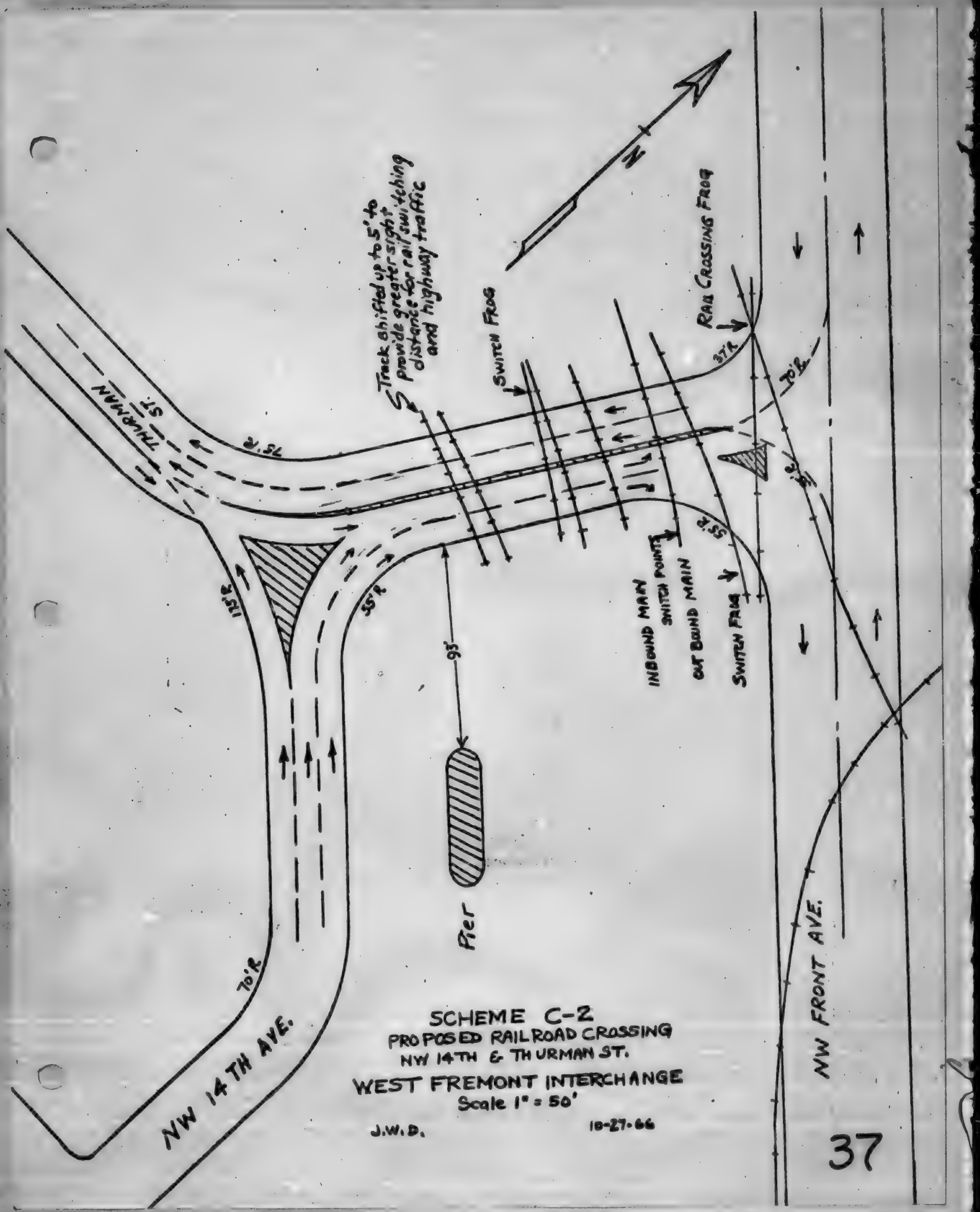
NW Front-Thurman-NW 14th Crossing

	Item	Material	Labor	Total
1.	Shift 1-#11 T.O. outward main	$100	$1,400	$ 1,500
	Remove 60' track @ $1.50		90	90
	Align 100' track @ $1.00		100	100
	Grading		100	100
	Signal Work	50	250	300
				2,090
2.	Shift 1-#9 Crossover in main-out main	100	1,900	2,000
	Remove 150' track @ $1.50		225	225
	Grading		100	100
	Signal Work	50	250	300
				2,625
3.	Shift 1-#9 T.O. inward main	50	950	1,000
	Remove 140' track @ $1.50		210	210
	Align 100' track @ $1.00		100	100
	Grading		100	100
	Signal Work	25	175	200
				1,610
4.	Shift #30 yard lead to closer centers 300' @ $2.00		600	600
	Sub-Total			$ 6,925
	Engineering and Contingencies 25%			1,750
	Taxes and Overheads 36% on Labor			2,360
	Stores Expense 10% on Material			40
	Total			$11,075



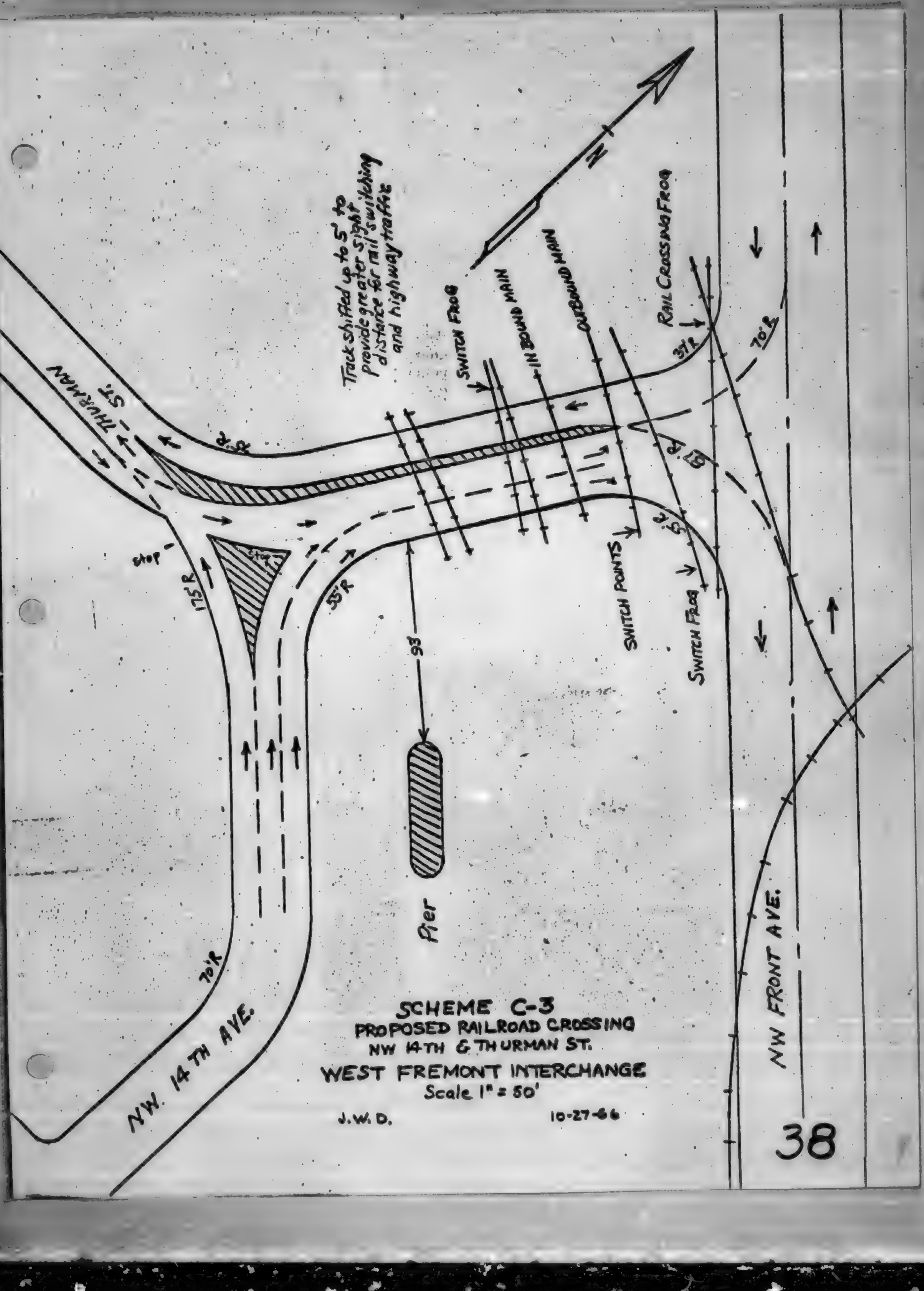
SCHEME C-1
PROPOSED RAILROAD CROSSING
NW 14TH & THURMAN ST.
WEST FREMONT INTERCHANGE
Scale 1" = 50'

J.W.D. 10-27-66



SCHEME C-2
PROPOSED RAILROAD CROSSING
NW 14TH & THURMAN ST.
WEST FREMONT INTERCHANGE
Scale 1" = 50'

J.W.D. 10-27-66



SCHEME C-3
PROPOSED RAILROAD CROSSING
NW 14TH & THURMAN ST.
WEST FREMONT INTERCHANGE
Scale 1" = 50'

J.W.D. 10-27-66

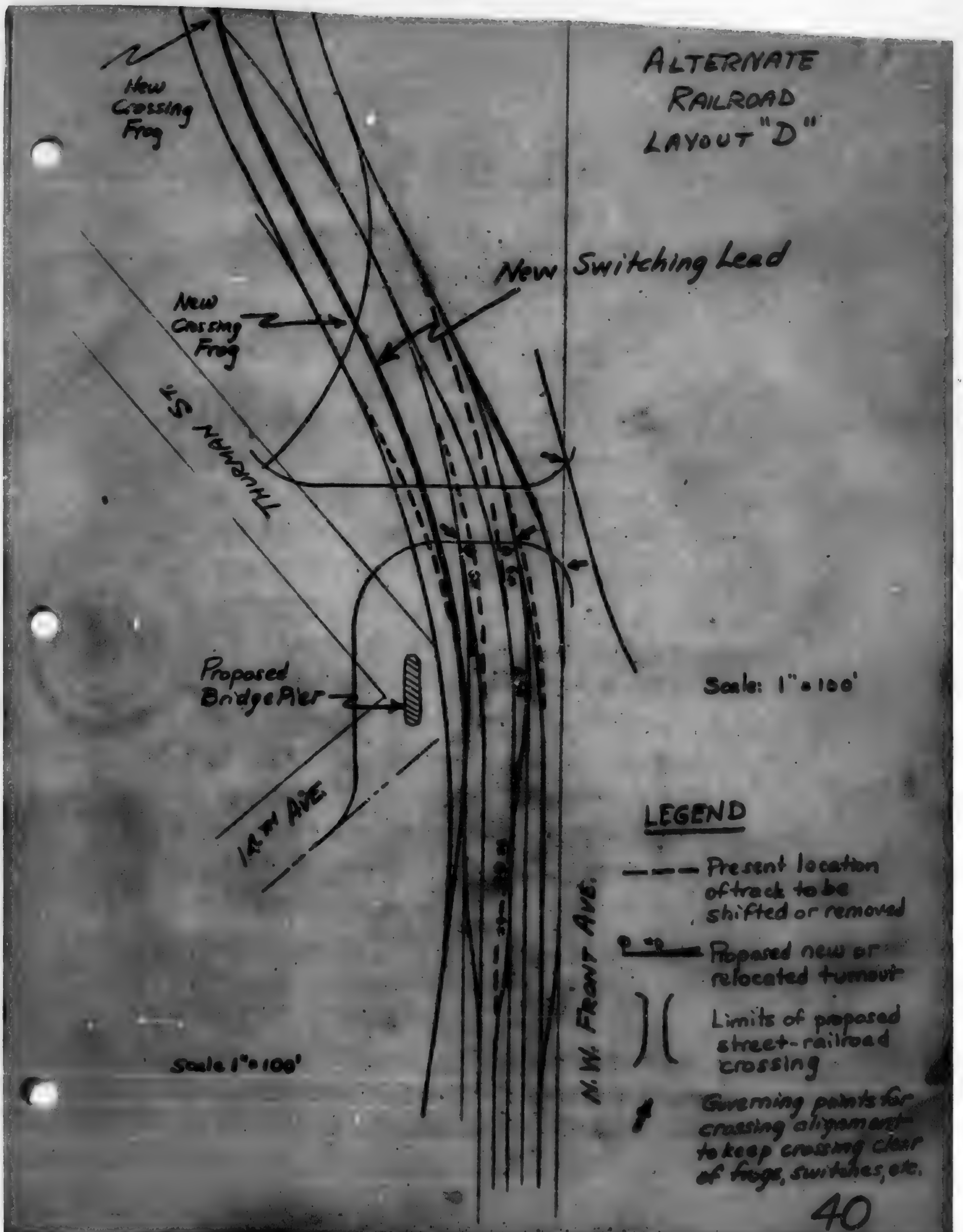
RECOMMENDED REVISED TRACK LAYOUT AND CROSSING ALIGNMENT

While the relocated crossing and revised track layouts shown on Pages 32 through 38 greatly improved the situation for both rail and highway traffic, the adverse sight distance problem for SP&S switching operations remained. As mentioned on Page 18, the only solution, with the bridge pier in the proposed location, appears to be the construction of a new switching lead for the SP&S, farther removed from the pier than the present, heavily-used Middle Yard Lead, so that sight distances comparable to those presently obtained in switching operations can be obtained after the pier has been constructed.

The recommended track layout is sketched on Page 40 and shown in detail on the plan attached as an appendix to this report. The proposed new switching lead is shown in red. It extends from the present Middle Yard-30 Yard crossover switch northward to connect with an existing stub end track at the N.W. 17th Avenue crossing. It would require eight hundred feet (800') of new track. Two sets of crossing frogs over other tracks would be required. With this installation, it is recommended that the Middle Yard-30 Yard crossover north of the present crossing be abandoned as superfluous, but allowance has been made for its retention in the cost estimates, should the SP&S insist upon its inclusion.

Other track changes, to reduce the number of tracks in the crossing and to eliminate any switches in the crossing, are similar to those planned for Layout "C", shown on Page 34 and preferred by the railroads, insofar as the crossing was concerned.

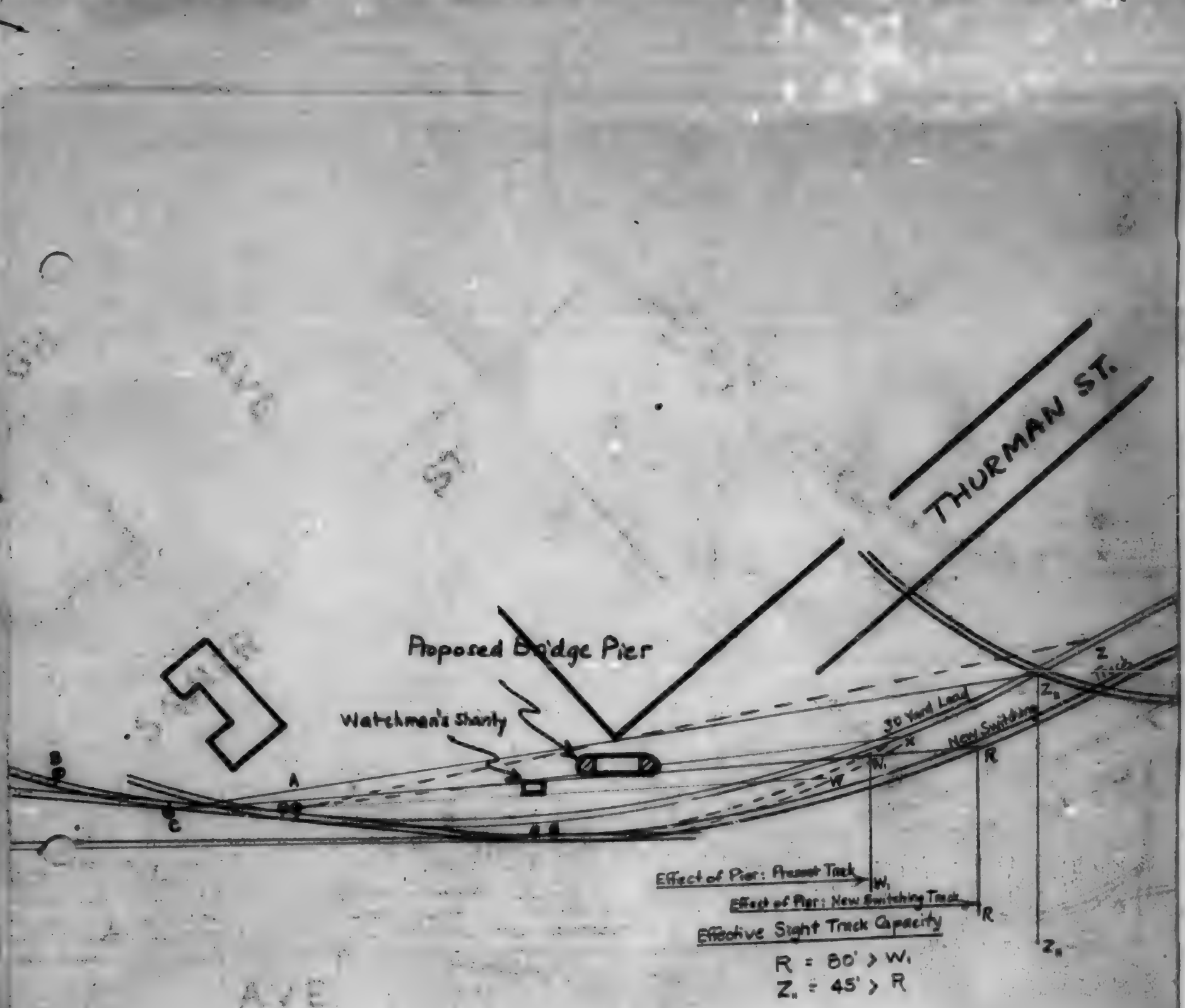
ALTERNATE RAILROAD LAYOUT "D"


New Crossing Frog
New Switching Lead
New Crossing Frog
THURMAN ST.
Proposed Bridge Pier
14TH AVE.
N.W. FRONT AVE.
Scale 1"=100'
Scale: 1"=100'
LEGEND
Present location of track to be shifted or removed
Proposed new or relocated turnout
Limits of proposed street-railroad crossing
Governing points for crossing alignment to keep crossing clear of frogs, switches, etc.

The improved sight distances for SP&S switching operations obtained by this plan are shown in the sketch on Page 42. Whereas the pier would have restricted sight for switching operations by as much as 125 to 150 feet with the present track layout, revised layout reduces this to approximately 45 feet, less than the length of one modern freight car. It represents an improvement of at least 80 feet in sight distances obtained otherwise with the pier in that location. Coupled with the relocation of the crossing, so that over 80% of present SP&S switching movements would not have to cross the new crossing location and be slowed by highway traffic, the operations of the SP&S would not be damaged in the net effect.

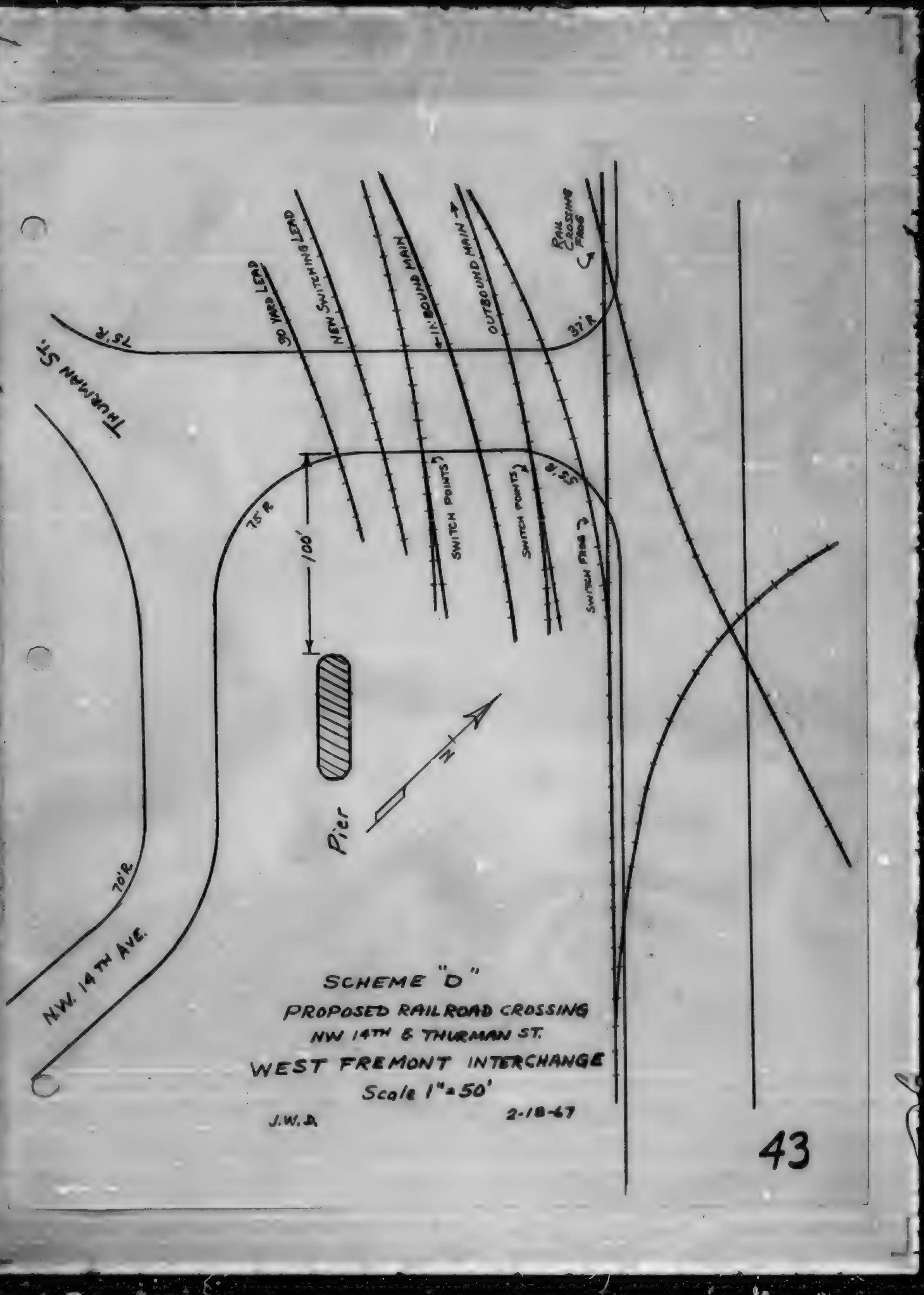
In fact, the new crossing and track layout, proposed as shown on Page 43, should improve operating conditions for both railroads. The number of tracks in the crossing has been reduced. There are no switches or complex pieces of trackwork in the crossing. The PTRR main tracks are further removed from N.W. Front Avenue, giving highway vehicles a slightly better opportunity to clear these through tracks, while waiting to merge with or cross traffic on N.W. Front Avenue. All highway traffic will be at least one hundred feet from the bridge pier, allowing a better view of the crossing and reducing the risk of highway-rail crossing accidents.

Ordinarily, it would have been expedient to terminate the new switching lead with a switch to an existing track beyond the point of effective sight distance. However, in this instance, there is a complexity of turnouts and crossings on adjacent tracks, which preclude this possibility. Hence, the only feasible and cheapest approach is to extend the track to N.W. 17th Avenue.



SIGHT DISTANCE RESTRICTIONS

Effect Upon
Track Capacities for
Switching Operations
Caused by Proposed Pier
Alleviated by New Track
Scale 1" = 100'



SCHEME "D"

PROPOSED RAILROAD CROSSING

NW 14TH & THURMAN ST.

WEST FREMONT INTERCHANGE

Scale 1" = 50'

J.W.D. 2-18-67

Estimates of the costs for this recommended layout are given on Pages 45 and 46. These include costs which would be incurred by the railroads, including crossing paving, guard timbers, drainage, relocation of watchboxes, and the construction and removal of tracks and switches, but excludes crossing warning signs, protective devices, and any costs incident to the bridge construction or property acquisition.

These estimates show that the total cost of the work indicated would be about $81,500. Work on the SP&S would account for about $57,312 of this; PTRR work, the balance. If the crossover (Item 1c) did not have to be retained, the costs could be reduced about $5,310 ($4,250 plus 25%).

The new switching lead (Items 1a, 1b and 1c) would cost about $46,000. This includes 25% for engineering and contingencies. It compares with the estimate of at least $26,000 annually required for an added yard crew man for each trick account the sight distance restrictions, or the capitalized amount of $400,000 to $500,000 for that one item alone.

Track layout changes, to permit relocation of the crossing without further damage to the railroads, would cost about $15,125 (Items 2, 3, and 6). Other costs related to construction of the new crossing and removal of the existing crossing are probably beyond the scope of this assignment, but have been estimated for guideline purposes, because of their being related so closely to this total package.

ESTIMATES FOR
ALTERNATE RAILROAD LAYOUT "D"
NW FRONT - THURMAN - NW 14TH CROSSING

	REF.	ITEM	RR	QTY	UNIT COST	SUB-TOTAL	(a)	TOTAL	
	1A	NEW SWITCHING TRACK - RE115	SPS	800'	17.00	$13,600			
		Shift Track		100'	6.50	650	*		
		Grading		900'	1.00	900			
		Rail Crossing Frogs		2	7000	14,000			
		Street Crossing @ NW [redacted]TH Ave.	(b)	80'	25.00	2,000			
		Relocate Catch Basin and Pipe				350			
		Relocate RR Telephone & 2 poles				500			
								$32,000	
	1B	REMOVE MIDDLE LEAD THROUGH NEW CROSSING							
		Track - Net Cost after Salvage	SPS	100'	2.00	200	*		
		Turnout to 30-yard Lead - " "		1		400	*		
								600	
	1C	OPTIONAL: RETAIN CROSSOVER (MIDDLE YARD - 30 YARD LEAD)							
		New #9 Turnout RE 115	SPS	1	5500	5500			
		Less above costs (*) for shifting and removal				1250	*		
								4,250	
	2	CONSTRUCT TURNOUT FROM INBOUND MAIN TO SIDING							
		New #9 Turnout RE 115	PTRR	1	5500	5500			
		Remove existing Turnout - Net Cost				400			
		Remove Track - Net Cost after Salvage		100'	2	200			
		Grading				100			
		Signal Work				300			
								6,500	
	3	TURNOUT FROM OUTBOUND MAIN TO #15 TRACK							
		Shift #9 Turnout RE 115	PTRR	1	1400	1400			
		Align Track Connecting in Existing Crossing				300			
		Grading				100			
		Signal Work				800			
								2,100	
	4A	NEW STREET CROSSING - NW 14TH	(b)						
		3 Tracks	SPS	150'	25	3750			
		1 Track (optional)	SPS	50'	25	1250			
		Relocate Crossing Watchbox	SPS			800			
		Relocate SPS MW Material Yard	SPS			200			
								6,000	

2-22-67

	REF	ITEM	RR	QTY.	UNIT COST	SUB-TOTAL		TOTAL
	4B	NEW STREET CROSSING-NW 14TH (b)						
		3 Tracks	PTRR	150'	$25	$3750		
		Relocate Crossing Watchbox	PTRR			500		
								$4,250
	5A	REMOVE EXISTING CROSSING						
		3 Tracks and Turnout Area	SPS			3,000		3,000
	5B	REMOVE EXISTING CROSSING						
		3 Tracks	PTRR			3,000		3,000
	6	SHIFT MAIN TRACK CROSSOVER						
		Shift #9 Crossover	PTRR	1	2700	2700		
		Remove 850' Track - Net Cost		250	2	300		
		Grading				100		
		Signal Work				400		
								3,500
	7	SUB-TOTAL						65,200
	8	Engineering and Contingencies @ 25%						16,300
	9	TOTAL					$	81,500

DIVISION OF COSTS ALLOCATED BY RAILROADS

	SPS	PTRR	
Sub-Total	$45,850	$ 19,350	
Engineering and Contingencies	11,462	4,838	
Total	57,312	24,188	$81,500

Notes:

(a) Includes 10% stores expense on material; 86% taxes, fringe benefits and related overheads on labor

(b) Includes timber inside and outside of each rail, paving and longitudinal drainage; Excludes crossing warning signs, protective devices, etc.

2-22-67

The crossing work would cost about $20,300 within the area of the railroad tracks, exclusive of warning signs and protective devices.

CONCLUSIONS AND RECOMMENDATIONS

It is recommended that the Highway Department:

1. Acquire property needed for the Fremont Bridge from N.W. Front Avenue to the Willamette River in fee, except for aerial easements over one SP&S track and switch at the edge of N.W. Front Avenue. Except for the track and switch, this is not operating property and could never be developed, from a practical standpoint, to be operating property without taking over the property of the Portland Public Docks.

2. Obtain aerial easements over the PTRR and SP&S tracks between N.W. Front Avenue and N.W. 14th Avenue, to the extent necessary. The span at this location and height does not interfere with rail operations.

3. Locate crossing about fifty feet farther north from the June 1966 plan. Relocate tracks as in Layout "D" (Page 40 and Appendix). Cost of this work will be about $81,500.

With these changes, as recommended, there would be no damage to the PTRR or the SP&S operations, except as noted in the report for protection during bridge construction. This plan improves the SP&S switching situation, virtually offsetting a serious sight

distance problem created by the proposed bridge pier located so close to the major SP&S switching tracks. All turnouts have been eliminated from the crossing and the relocation has made possible a crossing only half as wide as the present one, both results greatly reducing maintenance costs for the railroads.

The costs cited do not include any settlements for real estate required or air rights used.

It is believed that the railroads will find these recommendations acceptable from an operating standpoint and should have few, if any, recommended changes in principle.

MAIN TRACK CROSSOVER

FRONT

TH AVE.

ST.

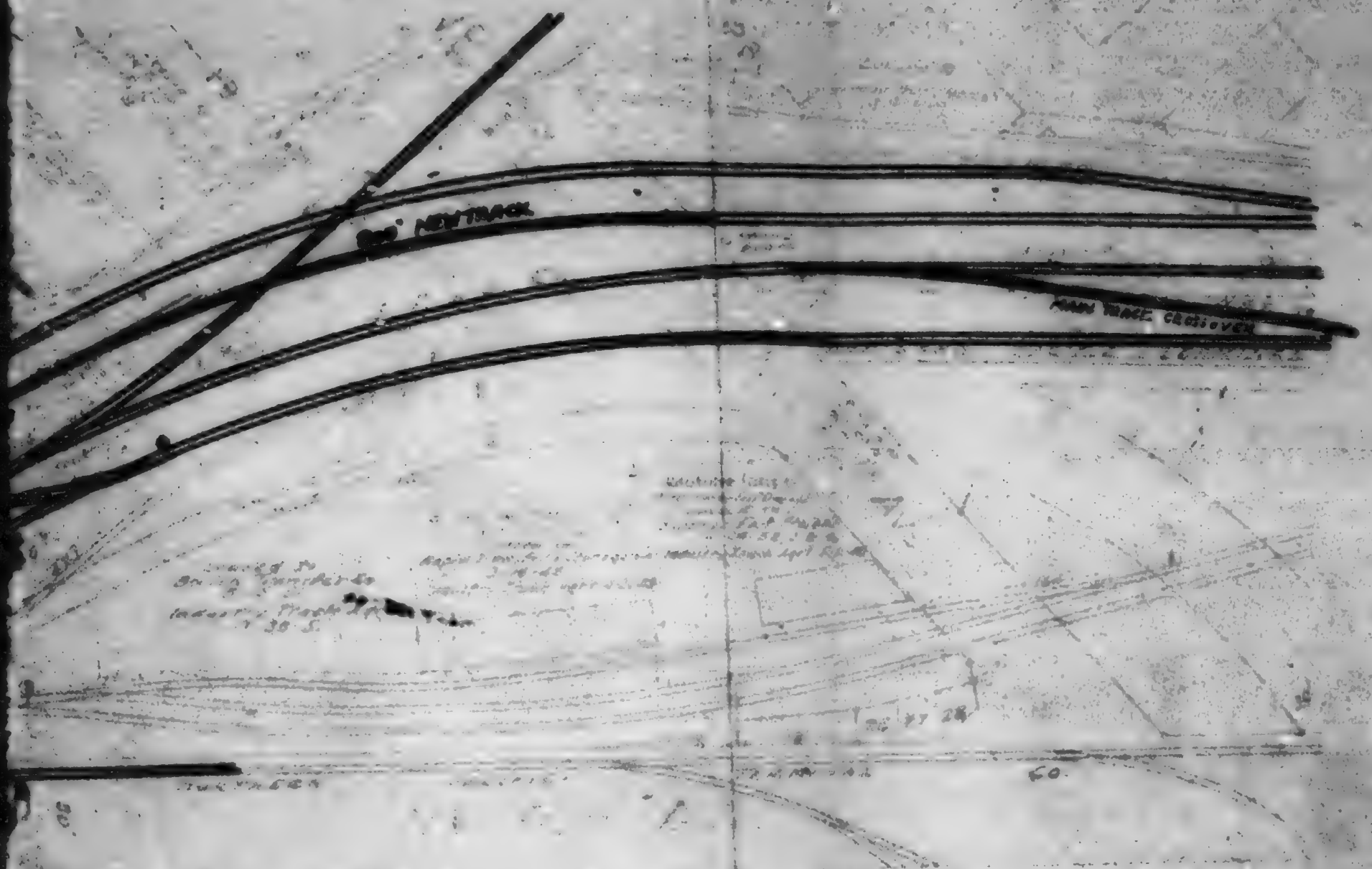
THURMAN ST.

SAYIER

BRIDGE PIER

AVE.

ALTERNATE
RAILROAD LAYOUT
"D"



TE
YOUT

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

PORTION II

This second portion of the report covers the problems on the east side of the river, involving the Union Pacific Railroad.

PROBLEMS

On the easterly side of the Fremont Bridge, from Bent #1 to Bent #5, the elevated highway approaches to the bridge pass over the tracks, buildings and property of the Union Pacific Railroad. The piers of bents #2, #4 and #5 are proposed to be placed on Union Pacific property.

One of the problems is to determine the status of the following buildings as operating properties:

The Yardmen's Locker and Toilet Building
The Union Pacific Club House
The National Carloading Warehouse
The Maintenance of Way Offices
The Division Headquarters Building
The Republic Carloading Warehouse

Other problems include:

Effect of the piers upon railroad operations
Changes needed to restore railroad to a "before" condition
Possible use of Union Pacific Freight House
Effect of elevated approaches upon freight house
Effect of piers and approaches upon future railroad operations and use of its property and facilities

CONSULTATIONS

For the second portion of this report, dealing with the east side problems, consultations were held with the designated representatives of the following companies:

UNION PACIFIC RAILROAD

Mr. William C. Krowartz	Assistant to the General Manager
Mr. Roland E. Haacke	District Engineer
Mr. Augustus V. Didier	Assistant to the Division Engineer
Mr. Glen Tabor	Assistant Engineer

NATIONAL CARLOADING

Mr. Kenneth L. Jones	Branch Manager

REPUBLIC CARLOADING

Mr. T. A. Ditmars	District Manager

FINDINGS

YARDMEN'S LOCKER AND TOILET BUILDING

This one story, cinder block building is located at the foot of North Russell Street. The elevated highway approaches will pass over about 75% of the building, between Bent #2 and #3. The north pier of Bent #2 will be located near the edge of North Russell Street between the front of the building and the railroad track leading to the Freight House spur and Storehouse Tracks #1 and #2.

The Yardmen's L&T Building houses the crew dispatcher, sign-up and roster facilities, lockers for railroad crews, lunchroom, and toilets. With facilities for several hundred men and in service 24 hours a day, it is clearly an operating unit, essential for Union Pacific operations at Albina. The table on Page 52 shows the activity at this building on Thursday, November 3, 1966, as measured by persons in and out of the building.

There is no railroad operating requirement which compels removal of this building to another location because of the overhead highway structures. In fact, the building is probably in the most convenient location possible for its present function, since there is easy highway access and ample parking for the employes and since crews can most conveniently pick up their locomotives from the immediate tracks just in front of the building. The bridge pier in front of the building will in no way impair operations, since it is not imperative to see the

OREGON STATE HIGHWAY DEPARTMENT
Metropolitan Division

MANUAL COUNT
Union Pacific Yardmen "L" & "T" Building
November 3, 1966

Time Period	Persons		
	In	Out	Accumulation
In Bldg.	--	--	20 (Est.)
12 Mid.-1A	18	34	4
1A-2A	10	7	7
2A-3A	12	15	4
3A-4A	7	3	8
4A-5A	23	11	20
5A-6A	22	34	8
6A-7A	44	30	22
7A-8A	44	39	27
8A-9A	27	45	9
9A-10A	21	20	10
10A-11A	23	21	12
11A-12 Noon	23	27	8
12P-1P	47	43	12
1P-2P	25	31	6
2P-3P	55	46	15
3P-4P	79	83	11
4P-5P	30	39	2
5P-6P	13	11	4
6P-7P	7	9	2
7P-8P	37	16	23
8P-9P	16	25	14
9P-10P	20	25	9
10P-11P	29	30	8
11P-Mid.	57	44	21
TOTAL	689	688	

tracks from the building.

The 100' to 120' minimum height of the highway approaches above the ground at this location will remove any problem of highway traffic noises interfering with communications or other use of this building for operating purposes. Such interference is often the case when overhead highway bridges are only fifteen or twenty feet above adjacent ground.

Other than policies of the Highway Department and the railroad, there is no practical reason requiring the removal of the Yardmen's L & T Building from this location beneath the proposed structure.

The only detriment to the railroad will be the interference during construction, the restriction on the use of air space, and the risks suffered with the presence of overhead highway traffic. Liability during construction can, of course, be covered by the usual insurance requirements placed upon the contractors and at levels established by the railroad. During construction there will be a considerable amount of interference, mostly of a nuisance nature, with the presence of construction rigs, material and vehicles in the area. Work could be programmed for the placing of steel, so as to work over the building during off-peak periods of least activity. For the date shown in the count on Page 52, these periods would be between 6 p.m. and 7 p.m. in the evening or just after midnight, from 12 until 4 a.m. Cooperation of the railroad will be required in placing steel

over the railroad tracks between Bent #1 and #2 and also between Bent #3 and #5. Placing of steel over the tracks will certainly cause more interference with rail operations, little though it will be, than any work affecting the Yardmen's L & T Building. Structural work far more complex than this was done in connection with the dismantling and reconstruction of Pennsylvania Station, New York, wherein the work and movement of upwards of 200,000 people per day were involved and not the few hundred affected here!.

In order to preserve the 24-hour operation of the building, it would be necessary to provide temporary quarters and telephone connections for the crew dispatchers and clerks who would have to be removed from the building during periods when construction work was taking place overhead. If there was insufficient room to accommodate them in the Maintenance of Way Building across the street, they could go in the resturant building purchased by the Highway Department. Special provisions would have to be made to prevent construction materials, tools, and debris from falling onto the building and the adjacent area during construction. These costs, coupled with the cost of fireproofing the building, may make it more economical to relocate the operation to a replacement building removed from under the structure.

The Yardmen's L & T Building is highly essential to rail operations. The proposed pier location of Bent#2 does not interfere with its use. The presence of the overhead structures is not detrimental to its functions. However, the cost of fireproofing the building, keeping it in 24-hour service, and protecting the safety of the employes within

and going to and from the building would be at least as great, if not greater, than providing a duplicate building in the same general vicinity but removed from the highway structures and the construction problems.

THE UNION PACIFIC CLUB HOUSE

This building, located on the west side of North Larrabee Avenue about seventy feet from North Russell Street, is an old frame structure, consisting of one large meeting room with some kitchen facilities on the first floor. No use is made of the second floor.

Since there are no conference of other assembly rooms for staff or instruction meetings in the Division offices 120 feet away, across North Russell Street, the Railroad uses the "Club House" for such meetings. The Division Offices are crowded and provide no space, even for modest-sized conferences. At considerable expense, the Railroad could provide conference rooms in unused freight house offices or even on the floor of the freight house, although this location, some 550 feet away from the Division Offices, is almost too remote to be convenient for staff purposes.

Although during most of the year this building is used semi-weekly for meetings of Union Pacific Railroad veterans, it clearly serves as an operating facility because of its use by the railroad's operating department for sta ff meetings,

training sessions, safety meetings, and the like.

- The frame construction of the building necessitates its being fireproofed or relocated. If fireproofed, there would be no practical problem with the building remaining under the structure at its present location. However, the cost of removal to a vacant Union Pacific parking lot only 400 feet away and approximately 200 feet from the Railroad's Division offices, would seem to be as economical, or more so, than attempting to fireproof the building and keeping it in its present location with all of the problems attendant thereto.

THE NATIONAL CARLOADING WAREHOUSE

This building, measuring approximately 50 by 275 feet with an additional open platform on the north end measuring 50 by 115 feet, is located on the northwest corner of North Knott Street and North Interstate Avenue. At this location, no left hand turns may be made from North Interstate Avenue for northbound traffic to turn onto North Knott Street, to gain access to the National Carloading Warehouse. Access is obtained from the main thoroughfare, North Interstate Avenue, via North Larrabee Avenue and approaching from the west side of the building over a number of Union Pacific Railroad tracks.

The building is one of the finest warehouses in the city for carloading purposes. Until the construction of newer, but smaller, warehouses at the Portland Transtech facilities in connection with the East Marquam interchange, this was considered by most authorities in Portland to be the best of its kind.

It was built by the Union Pacific especially for National Carloading, which has been the sole tenant for over twenty years. It is one of the few of its kind in the city with a concrete dock. Current policy of National Carloading home and local offices has been to avoid routing transcontinental shipments via the Union Pacific insofar as practicable. Except for local switching by the Union Pacific, most of the National Carloading traffic moves eastward via Great Northern or Northern Pacific.

The S P & S Railway has been consistently after National

Carloading to relocate to new warehouse facilities which it would provide on the opposite side of the river. While National Carloading would prefer the better rail service and connections to the Great Northern and Northern Pacific that it could get from being located on the S P & S, it finds this Union Pacific site far more advantageous from the standpoint of highway access. Thus, regardless of overhead structures, pier locations, etc., National Carloading would prefer to remain at or near its present location.

However, the latest plans for the bridge approaches with new alignments to prevent weaving sections on the bridge, as shown in Drawing Number 22586 dated November 14, 1966 and the plans superimposed upon the detail maps of the East Fremont Interchange dated March 16, 1967, show Bent No. 5 being located in such a manner as to destroy a major part of the warehouse building and render another portion inaccessible, as well as a pier of Bent No. 4 adjacent to North Knott Street making access from North Larrabee Avenue more difficult. Thus, it is no longer a question of preserving the building under the structure of the bridge approaches but rather of finding a suitable means of relocating this facility in the same general area served by the Union Pacific.

In the true sense, the warehouse cannot be classified as a railroad operating facility. It is not used by the railroad to receive or deliver, load or unload freight. It is not operated

by the railroad and never has been. The railroad in the past had conducted its own carload and less-than-carload freight operations elsewhere. The Union Pacific discontinued less-than-carload freight operations about two or three years ago.

While not an operating facility, the warehouse serves as an essential source of business for the railroad, being a location where is receives and delivers freight in carload lots from and to National Carloading and its subsidiary, Pacific and Atlantic Shippers. As such, it would seem to come under the Oregon statutes prohibiting interference with railroad facilities. This is ORS 374.020. It reads:

> "No throughway shall be established upon or across tracks, yards, station grounds, or other operating properties of any common carrier railroad, or upon or across any industrial or business property served by railroad industrial trackage, or upon or across any property at such a location as to unduly interfere with the reasonable access of shippers, passengers or the public to railroad depots, team tracks or other facilities for receiving or delivering freight or passengers transported by railroad unless the State Highway Commission and the railroad agree on a proposed throughway project, or unless the Public Utility Commissioner finds by order, upon petition of the State Highway Commission, after notice to the railroad and hearing in accordance with his rules of practice, that public convenience and necessity so require."

"Other facilities for receiving or delivering freight" certainly

Looking west from N. Interstate Avenue
N. Knott Street in foreground

Looking north from N. Knott Street
N. Interstate Avenue on right.

NATIONAL CARLOADING WAREHOUSE AT UP YARD

applies to this warehouse. Present facilities are shown on page 60.

The sketch on page 62 shows the location of the bridge piers in bents #4 and #5 with respect to the warehouse and the extent to which these piers affect the warehouse and its operations.

It is recommended that this facility be relocated by constructing a similar warehouse immediately north of this location, served by the same tracks aligned slightly at the north end, to provide tracks parallel with the building. At the top of this sketch is shown a suggested relocation of the access roadway from North Larrabee Avenue via North Knott Street, to avoid one of the piers in Bent #4, which would be located in the pavement of the present access road. This roadway relocation involves an expansion of the crossing in the tracks at this point, including the paving of a portion of the turnout leading to the Republic Carloading warehouse. The foundation of the present office building would have to be cut back to provide sufficient radius for the access road. Sloping of the rest of this foundation under the office at the south end and retention of as much as possible of the present warehouse concrete platform is suggested as a means of providing adequate for the present open platform for outdoor unloading.

The photographs on page 63 show the present National Carloading warehouse and the area immediately north thereof in which it is suggested that the facility be relocated.

The sketch on page 64 shows the proposed location of the warehouse, to remove this operation from the construction and final alignment of the bridge approaches. Track and other facility changes are noted.

N. KNOTT ST.

Pier

Present limits of paved roadway

Relocated roadway including expanded crossing limits.

P.S.

P.S.+5

cut back foundation

slope to provide ramp

Pier

Bent #4

P.S.

Bridge Pier

NATIONAL CARLOADING WAREHOUSE

Retain platform for out-door unloading

Bent #5

demolish for pier construction

P.3.

NORTH INTERSTATE AVENUE

EAST FREMONT INTERCHANGE

EFFECT OF PIERS UPON NATIONAL CARLOADING WAREHOUSE

SCALE 1" = 50'

AFFECTED NATIONAL CARLOADING WAREHOUSE AND TRACKS

Looking south.
Area in foreground could be used for relocation of warehouse and realignment of tracks.

Bridge piers will demolish or make ineffective the three bays at this north end of the warehouse.

Looking north.
Open platform in foreground. Embankment would be removed, to permit extension of building and loading area.

EAST FREMONT INTERCHANGE
STADIUM FREEWAY SECTION
PROPOSED
RELOCATION
OF
NATIONAL
CARLOADING
WAREHOUSE
Scale 1" = 50'

Existing Open Platform

Freeway upper deck

Present 12" Water Line

Proposed National Carloading Warehouse

50'

P.T.

Track Shifted to Proposed Location

Proposed Retaining Wall

P.T.

Relocated 12" Water Line

New Paving

Relocate Floodlight Tower

9" City Interceptor Sewer

45' cut

B

B

proposed base of slope

North Interstate Avenue

cut to 1:1 Slope

120' cut

present base of slope

P.S. +90.

P.C. Sta 0

4-29-67

The following costs are estimated for the railroad-related portions of this work:

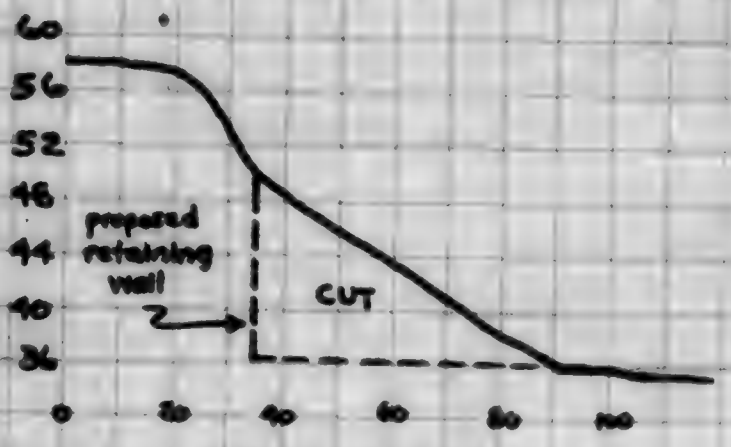
Shift track	400' @ $6.50	$ 2600
Shift turnout	#9 - RE 112	1400
Add 10' track a/c longer radius		200
Repave crossing over 2 tracks, north end		1000
Widen crossing over 2 tracks & turnout, s. end		1300
	Sub-total	6500
	Engineering and contingencies	1400
Total - railroad work		$ 7900

These costs do not include:

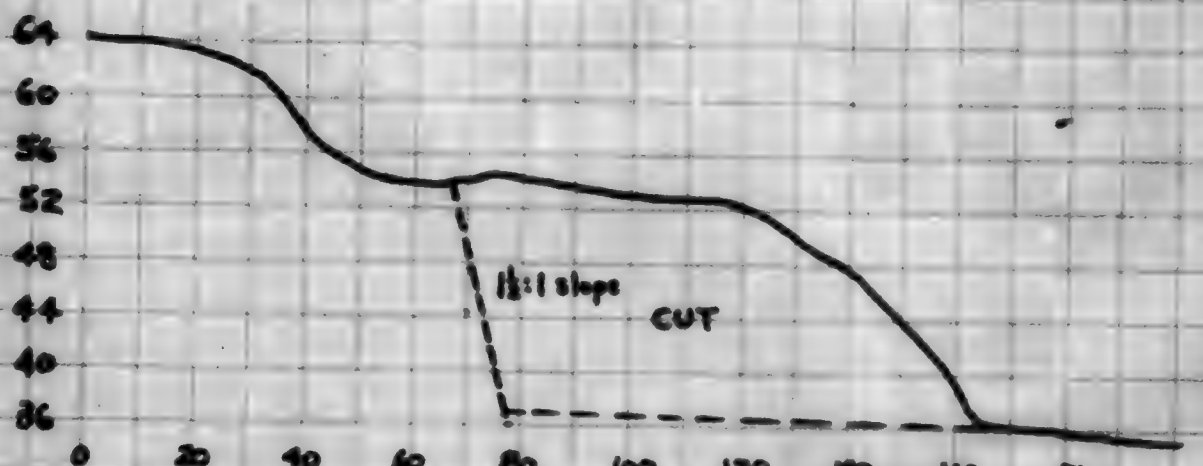
—Grading, drainage and earthwork
Building construction
Relocation of warehouse, office, operations
—Paving of roadways and loading area
—Relocation of utilities
Relocation of floodlight tower

Although this proposed location involves a considerable amount of earthwork, it has numerous other advantages related to restoring the operation to a "before" condition, besides being probably the most economical solution. It can be prepared in advance and be so scheduled as to involve no loss of time in warehousing operations. It does not require a change of address or any change in railroad switching procedures. It retains for the facility the same amount of visibility and exposure to the public along North Interstate Avenue as exists today. The same means of access from North Larrabee Avenue is retained.

The extent of some of the earthwork required is shown in the cross-sections on page 66. A retaining wall is required along the embankment adjacent to North Interstate Avenue and throughout the length of the new warehouse building, in order to provide fifty feet of clear driveway for docking of conventional forty-foot trailers.



SECTION A-A
AT LOCATION OF 12" WATER LINE



SECTION B-B

EAST FREMONT
INTERCHANGE
STADIUM FREEWAY SECTION

SECTIONS
OF
PROPOSED EARTHWORK
TO PERMIT
RELOCATION OF
NATIONAL CARLOADING WAREHOUSE

4-2947

THE MAINTENANCE OF WAY OFFICES

These offices, located on the south side of North Russell Street, are not underneath any of the bridge approach structures. The northwest corner of this building will be thirty feet from a vertical projection of the closest bridge deck. The south pier of Bent #2 will be more than ten feet from this corner. Though this is a frame two-story building, there is no hazard to it either during or after bridge construction which cannot be covered by customary contractor's liability insurance and usual construction precautions. The offices are clearly required for railroad operations.

THE DIVISION HEADQUARTERS OFFICES

These offices, located in a two-story frame building facing on North Randolph Avenue at the intersection of North Larrabee Avenue, will be some 140 feet from a vertical projection of the nearest bridge deck. This building is an essential operating facility, but it is in no way affected by the construction or presence of the bridge approaches.

THE REPUBLIC CARLOADING WAREHOUSE

This building, served by two Union Pacific house tracks, is a one-story frame structure located on North Russell Street about 75 feet from a vertical projection of the nearest bridge deck. It is one of the worst carloading warehouses in the city with a wooden, rat-infested warehouse floor. Republic Carloading was bankrupt in 1965 and lost most of its business. Business

picked up some in 1966. Republic has wanted to extend the building toward North Knott Street (and the proposed bridge structures!) but has been unwilling to pay the additional rental which would be demanded by the Union Pacific Railroad for doing so.

Construction of the bridge and its presence in no way affect the Republic Carloading warehouse, which could not be classified as a railroad operating facility, but instead would fall into the same category as the National Carloading warehouse, with ORS 374.020 governing. The building, in its present condition, is probably not worth fireproffing, even if such were required.

Extension of the building toward North Knott Street is not prevented by the presence of the proposed bridge structure, although any such extension would undoubtedly have to be of fireproof construction.

EFFECT OF PIERS UPON RAILROAD OPERATIONS

In contrast with the situation created by the construction of this bridge on the west side of the river, involving the Spokane, Portland and Seattle Railway, the bridge piers on the east side present no problems, insofar as railroad operations are concerned.

As shown by the photographs on pages 69 and 79, there are already so many obstacles to sight distances created by vehicles on the street and railroad parking lots, by railroad telegraph and utility poles, and by railroad buildings and other facilities, that the presence of the proposed bridge piers will hardly be notices, immense though they will be. Furthermore, switching on the tracks adjacent to these piers is negligible.

EFFECT OF BRIDGE PIERS

Looking NW from N. Randolph Avenue

Looking north near N. Russell Street.
M/W office Building on right.

N. Russell Street with Yardmen's L&T Building on the right.

BRIDGE PIERS WILL NOT IMPAIR SIGHT DISTANCES FOR OPERATIONS.

EFFECT OF BRIDGE PIERS

Looking NW from N. Randolph Avenue

Looking north near N. Russell Street.
M/W office Building on right.

N. Russell Street with Yardmen's L&T Building on the right.

BRIDGE PIERS WILL NOT IMPAIR SIGHT DISTANCES FOR OPERATIONS.

Looking South from House Spur
toward N. Russell Street
Bridge pier in front of L&T Building
will not impair sight distances for
this little-used track.

Looking north from same location
House Spur with Air Brake Instruction Car on Right
Next two tracks to the left are Storehouse Tracks

CHANGES NEEDED TO RESTORE RAILROAD TO A "BEFORE" CONDITION

Other than relocation of the Yardmen's Locker and Toilet Building, the Union Pacific Club House and the National Carloading Warehouse (and related tracks and facilities), there will be no track or other railroad facility changes required to restore the railroad to the same conditions after the bridge construction as existed prior thereto. This statement must, of course, recognize the fact that from a real estate standpoint, the railroad will have been bereft of a considerable amount of real property, air rights, and flexibility in making future changes to its tracks, buildings, and other facilities.

UNION PACIFIC FREIGHT HOUSE

Consideration was given to the possibility of using the relatively new Union Pacific freight house located at Albina Yard, just north of the proposed bridge approaches, to house the relocated National Carloading warehousing operations.

This freight house, built some six or seven years ago at a cost of approximately six million dollars, stands today as a white elephant, after the railroad went out of the less-than-carload business two years ago.

However, the facility is designed for a conveyor-type LCL railroad freight house transfer and is not well suited to a freight-forwarding operation. The railroad is still seeking some tenant for the facility other than the few who are using small platform areas for storage purposes and would not be too

disposed to making available even a small segment of this freight house, even if it could be adapted to a freight forwarding operation.

In spite of the questionable status and potential of the Union Pacific freight house, it was deemed essential that the effect, if any, of the proposed piers and bridge approaches upon the freight house be considered. This is depicted best by the photographs on page 73.

The top photograph shows that the freight house is barely discernable today, as one approaches it by the only accessible route from the City of Portland, after turning off North Interstate Avenue. This view is taken within 600 feet of the building. From this angle, on its only access route, there are no signs identifying it, and the view is obscured by poles, a sub-station and bushes.

The middle photograph shows the small effect that the only two piers obscuring a view of the building would have upon the present situation. The pier to the left (the south end of bent #3) takes up only slightly more of the view than the present bushes. At this distance, almost 500 feet from the freight house, the other pier (north end of bent #4) hardly affects sight of the building.

As shown by the lower photograph, the best view of the building, the one with the large sign, and with greatest exposure to the public along North Interstate Avenue, will not be affected by the bridge approaches which will be far to the south of it.

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

UNION PACIFIC
FREIGHT HOUSE

Looking north from intersection of N. Randolph Avenue and N. Larrabee Avenue

Looking north along N. Larrabee Avenue

Superimposed piers show that structures will not obscure the freight house or make it inaccessible.

Looking south.
Present best view of freight house is from this direction.

Visibility of freight house from N. Interstate Avenue will not be affected by proposed highway structures.

FUTURE EFFECT OF PIERS AND APPROACHES

Though it is relatively easy to predict the present effect, costs and damages caused by the construction and presence of the piers and overhead structures of the bridge approaches, it must be recognized that construction such as proposed will greatly restrict the Union Pacific Railroad in what it could do with its facilities in the future.

Presently, the railroad owns sufficient property on the west side of North Interstate Avenue and at the south end of its Albina Yard as to permit an extensive expansion of its yard, should the need arise. Though any such move appear unlikely at the present time, especially because of the presence of the big, empty freight house and other facilities, there is no question that compromises would have to be made in track alignments, to fit any facility changes around the bridge piers which are to be constructed. The presence of these piers as well as the overhead structure, therefore, damages the adjacent property to an extent greater than what would be indicated by the value of the property occupied by the piers.

Restricting the railroad from building under the bridge approaches will not damage railroad operations based upon the present layout of tracks and facilities. However, future realignment of tracks, already restricted by the presence of the proposed bridge piers, could make it advantageous to locate certain buildings under the bridge. Any such restrictions which would require a realignment of tracks to accommodate buildings at other locations could be detrimental to future operations.

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

SUMMARY

The Yardmen's Locker and Toilet Building is essential operating property. It does not have to be moved from its present location and could operate just as effectively under the proposed structure, but fireproofing, protection and other construction-related costs would indicate that its relocation is more economical and certainly preferable.

The Union Pacific Club House is operating property. It would be less expensive to move it than to attempt fireproofing.

The National Carloading warehouse is extensively damaged by the proposed piers. Though it is not operating property, it is a facility for receiving and delivering freight under ORS 374.020, with which the highway approaches would interfere. As such, it should be relocated immediately north of the present site, to be served by the same tracks, realigned.

The Maintenance of Way offices and Division Headquarters building are essential operating facilities, but they are not affected by the bridge structures.

The Republic Carloading warehouse is not an operating facility, but falls under the same ORS 374.020 category as the National Carloading warehouse. However, it is not affected by the bridge approaches and is in such a deplorable condition that it would not be worth moving, fireproofing or repairing, even if it were affected.

None of the proposed bridge piers affect Union Pacific Railroad operations, as such. No changes, except as noted above, are needed to restore the railroad to the "before" conditions, except that air rights and future flexible use of the property will be restricted by the bridge structures.

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

EFFECT OF ELIMINATING CERTAIN RESTRICTIONS

As mentioned on pages 74 and 75, the presence of the proposed bridge piers will restrict the flexible use of the property in the future, particularly with respect to the location of certain buildings and possibly with respect to track alignments.

Damages caused by all such restrictions, other than track alignments, will be eliminated if the Highway Department allows the railroad to operate its trains under the bridge, park autos and trucks, store non-inflammable materials, and construct buildings which meet the fire code under the bridge. In such case, payments, if any, would be purely a real estate matter and should invovle only the value of the area used for the piers and any unusual requirements for clearance and access thereto.

It appeared as though the piers, as proposed to be located, might have bestricted the flexibility of future track alignments, if the railroad, for some reason, should want to expand the ya rd or otherwise change the tracks. Since there could be a mulitiplicity of such alignments, the damages would, of necessity, have to be confined to the value of the area in which the piers would deprive the railroad from obtaining a satisfactory alignment, assuming maximum utilization of the space involved.

The area contiguous to Bent No. 3 is not affected, since the railroad does not own that property. Similarly, the Highway Department has so located the piers at Bent No. 2 within the street lines, that no damages could be supported there, even though the railroad would be restricted from crossing the street with additional tracks at that point.

The south pier of Bent No. 4 and all of Bent No. 5 are not susceptible to damages, because of the dedication of the two tracks and adjacent warehouse area for warehouse purposes, as evidenced by the proposed damages to relocate the warehouse further north, but on the same tracks.

This leaves only a small, trapezoidal-shaped area about the north pier of Bent No. 4, in which the flexibility of future track alignments could be limited by the bridge pier. However, this pier is located about one hundred feet in front of the railroad's $6,000,000 freight house, which, though not presently used for its intended purpose, is not likely to be torn down in the near future. Thus, it is unlikely that the area around this pier will become involved in any track alignment situation for a long time to come, at least not until the freight house is removed.

Thus, the concessions proposed to be granted by the Highway Department, granting to the railroad certain rights to the use of its property under the bridge, as outlined in the second paragraph on page 76, will eliminate the damages to the remaining yard due to lack of flexibility because of the bridge piers.

RECEIVED
AUG 16 1967

Salem, Oregon August 11, 1967

STATE OF OREGON:

I-405-8(17)303

To James Wilson Difficultcr, 115 E. Benedict Ave.

Bowerstown, Pennsylvania 19083, Dr.

Project 7276 Highway Comm. Agreement No.

Contractor Contract No.

Ry. Company's Agreement No. Estimate No.

Period Covered

I-405-(4)303

Item	Total Amount to Date	Previous Amount	Present Amount
July 19, 1967 Professional Service	$60.00		$60.00

NOTED
F. R. KLABOE

Totals

Retained 0 %

Total Payments $60.00 $60.00

Computed By J. J.

Checked By

Previous Voucher No.

Charge:

Charge: 636-2525-407 60.00

Charge:

Credit:

Approved By:

Auditor

JAMES WILSON DIEFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

RECEIVED
AUG 4 1967
FOR FILING

Morgan
Decker
Bond
Barbee
Walker
Glenn
Swan

RECEIVED
AUG 1 1967
CONSTRUCTION
DIVISION

29 July 1967

Peare
Morelock
Trout
Scott
Wills
Litchfield
Olsen

Ernest
Prog
Maine Portland

Fremont Bx.

Dear Fred,

Here is the bill for the two latest pages of my report, written in answer to your request of June 16.

Please excuse the delay in getting an answer to you, as I was away on some "resting" vacation when your letter came.

I believe this still leaves you with a cushion of more than four hundred dollars under the four thousand dollar authorization.

Thanks for the opportunity of working with you. I hope you are personally well and also getting the progress you want on this project.

Sincerely,

Jim

NOTED
F. B. KLABOE

Mr. F. B. Klaboe
Assistant State Highway Engineer
State Highway Department
Salem, Oregon 97310

RECEIVED
AUG 4 - 1967
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
F. B. KLABOE

RECEIVED
AUG 1 - 1967
OFFICE OF
STATE HIGHWAY ENGINEER

Refd to Litchfield
for processing
8-1-67
To Accounting 8-3-67

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

29 July 1967

STATE OF OREGON, STATE HIGHWAY DEPARTMENT
Mr. Forrest Cooper, State Highway Engineer
Attention: Mr. R. L. Porter
Deputy State Highway Engineer
SALEM, OREGON 97310

RE: FREMONT BRIDGE
PORTLAND, OREGON
INTERSTATE ROUTE 405
PROJECT I-405-8 ~~(1) 303~~
IMPACT UPON RAILROAD OPERATIONS (4)303

FOR PROFESSIONAL SERVICES RENDERED
IN ACCORDANCE WITH LETTERS OF JULY 12 AND AUGUST 16, 1966

Portion II of Report - East Side

Professional Services

1967

July 19 Analyze effect upon and damages to remaining Union Pacific Railroad Albina Yard operations and facilities as result of certain concessions proposed to be made by Highway Department to Railroad following completion of Portion II of report on May 13, 1967.
Report findings on pages 76 and 77 of report, under section headed, " Effect of Eliminating Certain Restrictions. "

3 hours $60.00

APPROVED FOR PAYMENT
PREFIX 626-2525-407
D. Fitchfield
UTILITIES LIAISON ENGINEER
8-3-67

I hereby certify that this statement is a true and correct compilation of services rendered and costs incurred for work done on July 19, 1967.

James W. Diffenderfer Jr.
James W. Diffenderfer, P. E. Oregon Reg. No. 5280

RECEIVED
AUG 4 1967
FOR FILING

E-405-8(17)803
7276

August 4, 1967

Rev. James W. Diffenderfer
115 East Benedict Avenue
Havertown, Pennsylvania 19083

1842

Dear Mr. Diffenderfer:

Thank you for your letter of July 19 and the additional pages of your report on the East Fremont Interchange. This information will make our appraisals of the damage to the Union Pacific Railroad property much easier.

On the west side of the river we have submitted your proposal to both the Spokane, Portland and Seattle Railway and the Portland Terminal Railroad and have received a favorable response from the Portland Terminal people. Mr. R. L. Thomas has recommended that the changes as you proposed in your Alternate Railroad Layout "D" be effected in conjunction with our construction of the grade crossing. However, this involves obtaining approvals from the Union Pacific, Northern Pacific and Southern Pacific Railroads, and this appears to be a major task. Nevertheless, he is pushing it along, and we hope that a satisfactory agreement will result so that we can let the pier contract on January 25, 1968.

Mr. Hal Moy of the S. P. and S. has determined that they will not need to make any track changes, at least this has been his most recent statement, and he feels that the changes you propose would be the absolute maximum they would do.

The Portland Terminal problem is further complicated by the fact that the portion of the existing crossing which will be abandoned now is owned largely by the S. P. and S and not the Terminal Company. Therefore, the granting of an easement across Portland Terminal tracks for the new grade crossing will not be a simple exchange of property between the State and the Terminal Company, but will require the Terminal Company to acquire an easement from S. P. and S.

This grade crossing has recently been staked and we are going to meet with Mr. Guy E. LaSalle of S. P. and S. and Mr. Thomas of the Portland Terminal Railroad to be sure that the location is satisfactory before we draw up a description of the easement required.

Thanks again for all your help in this problem and we will keep in contact for further advice if the need should arise.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

F. D. Klaboe
Assistant State Highway Engineer

cc: Forrest Cooper
R. L. Porter
O. E. Rohde (Att: Jack Sollis)
F. D. Morgan
Ivan Merchant
D. H. Moehring
T. W. Litchfield

TWL:ss srb

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

RECEIVED
AUG 7 1967

FILE COPY
I-405-8(17)303
7276

19 July 1967

Routing
Morgan
Dicker
Bond
Barbee
Walker
Glenn
Ewing
Pease
Morelock
Trout
Scott
Wills
Litchfield
Olson
RECEIVED
JUL 28 1967
CONSTRUCTION
DIVISION

Mr. Forrest Cooper
State Highway Engineer
State Highway Department
State of Oregon
Salem, Oregon 97310

Attention: Mr. Fred B. Klaboe
Assistant State Highway Engineer

Dear Fred:

Here are two additional pages to my report, pages 76 and 77, answering the inquiry in your letter of June 16.

I really struggled over this one, because it posed a number of interesting problems, which had to be checked out by the process of elimination, but I am happy to report that, in my opinion, you have eliminated the damages to the remaining yard due to the lack of flexibility because of the location of the bridge piers, by the decision described in the first paragraph of your letter.

Let us hope now that the railroad will realize your fairness, see the wisdom of your proposal, and accept your offer.

Have you had a favorable response from the SP&S and the PTRR to the proposals on the west side?

Sincerely,

James W. Diffenderfer, P. E.
Oregon No. 5280

NOTED
TOM EDWARDS

7-21-67
Copies to
Porter
Davis
Whitlock

Merchant
Linder
Parker
Buchanan
7-27-67

RECEIVED
AUG 4 - 1967
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
F. B. KLABOE

RECEIVED
JUL 21 1967
OFFICE OF
STATE HIGHWAY ENGINEER

Copy to Reed 7-25-67

EFFECT OF ELIMINATING CERTAIN RESTRICTIONS

As mentioned on pages 74 and 75, the presence of the proposed bridge piers will restrict the flexible use of the property in the future, particularly with respect to the location of certain buildings and possibly with respect to track alignments.

Damages caused by all such restrictions, other than track alignments, will be eliminated if the Highway Department allows the railroad to operate its trains under the bridge, park autos and trucks, store non-inflammable materials, and construct buildings which meet the fire code under the bridge. In such case, payments, if any, would be purely a real estate matter and should invovle only the value of the area used for the piers and any unusual requirements for clearance and access thereto.

It appeared as though the piers, as proposed to be located, might have restricted the flexibility of future track alignments, if the railroad, for some reason, should want to expand the ya rd or otherwise change the tracks. Since there could be a multiplicity of such alignments, the damages would, of necessity, have to be confined to the sums of the area in which the piers would deprive the railroad from obtaining a satisfactory alignment, assuming maximum utilization of the space involved.

The area contiguous to Bent No. 3 is not affected, since the railroad does not own that property. Similarly, the Highway Department has so located the piers at Bent No. 2 within the street lines, that no damages could be supported there, even though the railroad would be restricted from crossing the street with additional tracks at that point.

The south pier of Bent No. 4 and all of Bent No. 5 are not susceptible to damages, because of the dedication of the two tracks and adjacent warehouse area for warehouse purposes, as evidenced by the proposed damages to relocate the warehouse further north, but on the same tracks.

This leaves only a small, trapezoidal-shaped area about the north pier of Bent No. 4, in which the flexibility of future track alignments could be limited by the bridge pier. However, this pier is located about one hundred feet in front of the railroad's $6,000,000 freight house, which, though not presently used for its intended purpose, is not likely to be torn down in the near future. Thus, it is unlikely that the area around this pier will become involved in any track alignment situation for a long time to come, at least not until the freight house is removed.

Thus, the concessions proposed to be granted by the Highway Department, granting to the railroad certain rights to the use of its property under the bridge, as outlined in the second paragraph on page 76, will eliminate the damages to the remaining yard due to lack of flexibility because of the bridge piers.

RECEIVED
JUN 19 1967
FOR FILING

IL 405-8(17)303

7276

June 16, 1967

AIRMAIL
Mr. James W. Diffenderfer
115 E. Benedict Avenue
Havertown, Pennsylvania 19083

Dear Mr. Diffenderfer:

Re: A study of the effect of the Fremont Bridge upon railroad operations Interstate I-405

Since you have completed your study, the Highway Department has decided to allow the Union Pacific Company to operate their trains underneath the bridge, park under the bridge, store noninflammable materials under the bridge and construct buildings under the bridge that meet the fire code.

If the Railroad is allowed to do this, in your opinion, will this eliminate the damages to the remaining yard due to the lack of flexibility because of the location of the bridge piers, as you noted on page 74 of your report.

If you still feel there is some damage, could you give us some indication as to how extensive you feel this damage would be.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

F. B. Klaboe
Assistant State Highway Engineer

cc: Forrest Cooper
R. L. Porter
G. E. Rohde
Frank McKinney
Jack Sollis
T. W. Litchfield
A. E. Johnson

JLS:ja srb

RECEIVED
JUN 13 1967
STATE OF OREGON

Salem, Oregon 9 June, 19 67

F-405-8(17)303
7276

To James W. Diffenderfer, 115 East Benedict Avenue

Havertown, Pennsylvania 19083, Dr.

Project Highway Comm. Agreement No.

Contractor Contract No.

Ry. Company's Agreement No. Estimate No.

Period Covered 17 March/13 May 1967

Item	Total Amount to Date	Previous Amount	Present Amount
19 May 1967, Professional Services	$ 588.52		$ 588.52

Totals $ 588.52 $ 588.52

Retained 0 %

Total Payments

NOTED
F.B. KLABOE

Computed By J.J.

Checked By

Previous Voucher No.

Charge:

Charge: 626-2525-407-P

Charge:

Credit:

Approved By:

Auditor

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

19 May 1967

STATE OF OREGON, STATE HIGHWAY DEPARTMENT
Mr. Forrest Cooper, State Highway Engineer
Attention: Mr. R. L. Porter
Deputy State Highway Engineer
SALEM, OREGON 97310

RE: FREMONT BRIDGE
PORTLAND, OREGON
INTERSTATE ROUTE 405
Project I-405-8 ~~(1) 301~~
IMPACT UPON RAILROAD (4) 303
OPERATIONS

FOR PROFESSIONAL SERVICES RENDERED
IN ACCORDANCE WITH LETTERS OF JULY 12 AND AUGUST 16, 1966

Portion II of Report - East Side

I-405-2525-407

Project 626-1(4)303 Portland Freeway - E-5-611
Fremont Bridge
Impact on Railroad Operations

Professional Services

1967

March 17	Confer at Portland with OSHD Officials on Portion I of report and scope of Portion II with revided Bridge plan; see SP&S Officials; check UPRR Albina Yard	4 hours	$ 80
March 18	Confer with Manager, PTRR; Further field study of UPRR Albina Yard, movements, sight distance problem; study National Carloading problem	3 hours	60
April 22	Study east side problem; pier effect and National Carloading problem; effect on UPRR Freight House; Layout warehouse solution and revised trackwork	4 hours	80
April 29	Exhibits of warehouse situation; sight distance problems of piers next to L&T Building; Computs estimates, prepare photo exhibits; outline report	6 hours	120
May 13	Complete exhibits; write report	1 day 3 hours	150 60
	SUB-TOTAL, PROFESSIONAL SERVICES		$ 550

Expenses Incurred

March 17	Meal	$ 4.35	
	Phone calls	1.20	
	Hotel	14.00	
March 18	Meal	2.50	
	Auto rental	13.02	
May 1	Phone	2.97	
May 13	Postage	0.48	
	SUB-TOTAL, EXPENSES	$ 38.52	38.52
	TOTAL AMOUNT DUE		$ 588.52

I hereby certify that this statement is a true and accurate compilation of services rendered and costs incurred in connection with work done from 3-17 to 5-13-67

James W. Diffenderfer
James W. Diffenderfer P.E. Agent

RECEIVED
MAY 31 1967

FOR FILING

I 405-8(17)303
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
May 29, 1967

NOTED
R. L PORTER

To: Frank C. McKinney
Assistant Counsel

SUBJECT: Resume of report of Mr. Diffenderfer on the effect of the Fremont Bridge on railroad operations of the Union Pacific Railroad

Office

In reviewing the report there appear to be six salient facts that should be considered regarding the damage to the Union Pacific Railroad.

1. Mr. Diffenderfer stated that the yardmen's locker and toilet building is operating property and that it would not have to be moved from its present location. However, I feel that the relocation of the building outside of the easement area for the bridge would probably be cheaper than fireproofing the building, protecting it during construction, and other construction-related costs. It would appear that this point should be carefully looked into, based on the cost of fireproofing, protecting and construction-related costs as against building them a new building outside the right of way.

2. The Union Pacific clubhouse has been determined to be operating property and I believe the railroad is agreeable to moving it to another lot about 400 feet away.

3. The maintenance of way offices are not affected by the bridge, though they are operating facilities.

4. The division headquarters building is not affected by the bridge structure, although it is an operating facility.

5. The Republic Carloading Warehouse is not an operating facility and is not affected by the bridge construction.

6. The National Carloading Warehouse is extensively damaged by the construction and will have to be purchased. Though this is not operating property, it is a facility for receiving and delivering freight and under ORS 374.020 we would have to apply to the PUC for permission to condemn it.

RECEIVED
MAY 31 1967
OFFICE OF
STATE HIGHWAY ENGINEER

5-31
Copy to Klabo

There is also the possibility that in the event of a condemnation the court might hold it to be operating property and, therefore, we should be prepared with not only the fair cash market value of the property but also the cost of relocation and reconstruction of a similar building in the immediate area as indicated in the study.

Another aspect which has not heretofore been mentioned is the fact that Mr. Diffenderfer feels that the future flexibility of the railroad's use of their yard will be impaired by the bridge piers, although they will not affect the present usage. Allowing the railroad to place additional buildings under the bridge would, to a certain extent, alleviate this damage, but there would still be some damage and this is a factor which is very vague and must be considered by the person appraising the property.

If it is necessary to condemn this property, and it is my opinion that it will be, I feel we should have the property condemned by the federal government, inasmuch-as we would have to go through the PUC for a certificate of necessity to condemn the property before filing condemnation action, and assuming that the PUC should rule in our favor, this matter could be appealed and take a year or more to have decided. I therefore feel that as soon as our appraisals are complete we should request the Bureau of Public Roads to proceed with condemnation and furnish them with the necessary material as required by PPM 80-7.

JACK L. SOLLIS
Staff Attorney

cc: J.E. Rohde
R.L. Porter

RECEIVED
MAY 21 1967

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

FOR FILE

I 405-8(17)3C3

7276

19 May 1967

Dear Fred:

I hope you received Portion II of my report in good shape on Monday morning, or, at the latest, by Tuesday and found it both comprehensive and satisfactory.

Here is a bill which brings things up to date and still leaves you almost five hundred dollars under the limit. I am glad that we were able to coordinate some of our visits to Portland with trips on other business to the west coast.

Thanks for your patience in giving me the time to complete this assignment, what with everything else we had going on. I hope it has been worth your waiting.

I appreciate the opportunity to be of service to you and certainly count it a pleasure to have worked with you and the other fine men of the Highway Department on this project.

Sincerely,

Jim

NOTED
F. B. KLABOE

Mr. F. B. Klaboe
Assistant State Highway Engineer
State Highway Department
Salem, Oregon 97310

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MAY 22 1967
OFFICE OF
STATE HIGHWAY ENGINEER

owing to Litchfield
to check + process
for payment.

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

19 May 1967

STATE OF OREGON, STATE HIGHWAY DEPARTMENT
Mr. Forrest Cooper, State Highway Engineer
Attention: Mr. R. L. Porter
Deputy State Highway Engineer
SALEM, OREGON 97310

RE: FREMONT BRIDGE
PORTLAND, OREGON
INTERSTATE ROUTE 405
Project I-405-8 (1) 301
IMPACT UPON RAILROAD
OPERATIONS

FOR PROFESSIONAL SERVICES RENDERED
IN ACCORDANCE WITH LETTERS OF JULY 12 AND AUGUST 16, 1966

Portion II of Report - East Side

Professional Services

1967

March 17	Confer at Portland with OSHD Officials on Portion I of report and scope of Portion II with revised Bridge plan; see SP&S Officials; check UPRR Albina Yard	4 hours	$ 80
March 18	Confer with Manager, PTRR; Further field study of UPRR Albina Yard, movements, sight distance problem; study National Carloading problem	3 hours	60
April 22	Study east side problem; pier effect and National Carloading problem; effect on UPRR Freight House; Layout warehouse solution and revised trackwork	4 hours	80
April 29	Exhibits of warehouse situation; sight distance problems of piers next to L&T Building; Compute estimates, prepare photo exhibits; outline report	6 hours	120
May 13	Complete exhibits; write report	1 day 3 hours	150 60
	SUB-TOTAL, PROFESSIONAL SERVICES		$ 550

Expenses Incurred

March 17	Meal	$ 4.35	
	Phone calls	1.20	
	Hotel	14.00	
March 18	Meal	2.50	
	Auto rental	13.02	
May 1	Phone	2.97	
May 13	Postage	0.48	
	SUB-TOTAL, EXPENSES	$ 38.52	38.52
	TOTAL AMOUNT DUE		$ 588.52

I hereby certify that this statement is a true and accurate compilation of services rendered and costs incurred in connection with work done from July to Manager

James W. Diffenderfer P.E.
James W. Diffenderfer P.E.

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MAR 24 1967
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COMMISSIONERS
GLENN L. JACKSON, CHAIRMAN
MEDFORD
KERR GIBSON, COMMISSIONER
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND

I-405-8(17)303
7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

March 23, 1967

Mr. A.W. Parsons
Division Engineer
Bureau of Public Roads
477 Cottage Street NE
Salem, Oregon

Re: Diffenderfer Report
West Fremont Interchange Section
Stadium Freeway-Multnomah County
Project No. I-405-8(4)303

Dear Sir:

Herewith you will find two copies of a report on the effect of the Fremont Bridge upon railroad operations under the west end of the Fremont Bridge, written by Mr. James W. Diffenderfer, P.E. In this report, he recommends certain rearrangement of trackage and a proposed relocation of the connection between the intersection of 14th Avenue and Thurman Streets, and Front Avenue as shown in his alternate railroad layout "D".

You will note his plan requires the relocation of tracks which will cost approximately $81,500. Much of this is required by the location of Pier 2W, which is shown on Page 12 of his report. This pier is now located at Sta. 367+76, 6' farther from the track than shown on Page 12. The effect of this pier and its size, as shown on recent Bridge drawings dated March 8, 1967, has been compared with the SIG-NT distance restrictions shown on Page 15 and 42 of this report, and it appears that the size as now proposed is larger than the size indicated on previous drawings and the 6' greater distance from the track results in no change in SIG-NT distance restriction from that originally stated. Therefore, all discussion in this report pertaining to site distance restriction is still pertinent and accurate.

We submit this report to you for your approval and comment. At this time, we are presenting this to the two affected railroad companies and asking for their comments and approval on alternate railroad layout "D" as shown in the appendix of this report.

Another copy of the report was handed to your Mr. Schell on March 16, 1967.

Very truly yours,

F.D. Morgan
Construction Engineer

By ORIGINAL SIGNED BY T W LITCHFIELD
T.W. Litchfield
Utilities Liaison Engineer

TWL:sg
cc: B.L. Porter (w/report)
Tom Edwards "
F.B. Klaboe "
I.D. Merchant "
A.E. Johnson "
Jack Hesla "

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MAR 24 1967
OFFICE OF
STATE HIGHWAY ENGINEER

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RECEIVED
JAN 24 1967
FOR FILING

COMMISSIONERS
GLENN L. JACKSON, CHAIRMAN
MEDFORD
KENNETH H. FRIDLEY, MEMBER
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND

I-405-8(17)303
7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

January 23, 1967

Mr. James W. Diffenderfer
115 East Benedict Avenue
Havertown, Pennsylvania 19083

Re: Easement for Highway Structures
R/W Files 36067 and 37127
East Fremont Interchange Section
Stadium Freeway-Multnomah County
Project No. I-405-8(4)303
UPRR File: D 9010-32-17

Dear Mr. Diffenderfer:

With my letter of August 31, 1966, I sent to you the pertinent correspondence pertaining to our negotiations with the Union Pacific Railroad Company on the above-captioned project. Since that time, we have altered the plans as you saw when you were here on November 10, and we have now received a response from the railroad stating their position concerning this plan.

You will find attached the Union Pacific's letters dated December 2, 1966 and January 10, 1967 voicing their objection to our current proposal. Their January 10 letter was written after this had been staked in the field, and they had studied a set of photographs of our model of the interchange as well as plans and profiles submitted previously.

In your letter of October 21, 1966 you asked that we get a copy of the side track agreement between Linde Air Products and the Union Pacific. You will find attached a memo to the files dated October 31, 1966, written by Mr. G.R. Webb, Right of Way Agent, setting forth the terms of the agreement and also the ordinance by which the tracks occupy the portion in the street. Inasmuch as we have purchased the property owned by Linde Air Products (Union Carbide Corporation), and that includes the portion of the railroad tracks lying on their property, this track is now property of the State of Oregon. The portion of the tracks occupying the public street still belongs to the railroad and should be removed at the railroad's expense, in accordance with the City ordinance.

NOTED
R. L. PORTER

We are obtaining photographs, as you suggest, and also are searching our files to determine an accident experience on similar structures. When you were here, we handed you the traffic count on the Yardman's L and T Building; and now it appears that with this attached information, you now have all you

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JAN 23 1967
OFFICE OF
STATE HIGHWAY ENGINEER

need to complete your study of this problem. If you need further information, please do not hesitate to contact me.

Very truly yours,

F.D. Morgan
Construction Engineer

By ORIGINAL SIGNED BY
T. W. LITCHFIELD

T.W. Litchfield
Utilities Liaison Engineer

TWL:sg

Attachments

cc: R.L. Porter (w/ copy of UPRR letter - January 10, 1967)
F.B. Klaboe "
I.D. Merchant "
D.H. Moehring "
A.E. Johnson "
F.B. Crandall " (w/copy of Diffenderfer's letter - Oct. 21, 1966)
D.E. Sturmer "
Jack Hesla "

UNION PACIFIC RAILROAD COMPANY

TRANSPORTATION DIVISION
DEPARTMENT OF OPERATION

W. G. JOHNSON
SUPERINTENDENT
OREGON DIVISION

2525 NO. LARRABEE AVE.
PORTLAND, OREGON 97227

JANUARY 10, 1967

File Ref. D 9010 - 32 - 17

-1-

Mr. F. D. Morgan,
Construction Engineer
Oregon State Highway Department
Salem, Oregon 97310

Atten: Mr. T. W. Litchfield,
Utilities Liaison Engineer

Dear Sir:

Project I-405-8(4)303, East Fremont Interchange Section, Stadium Freeway - Multnomah County.

Please refer to your letter of December 2, 1966 and mine of the same date concerning the Oregon State Highway Department's latest proposal for constructing the Fremont Bridge and East Fremont Interchange over and across the Railroad's Albina Yard in Portland, Oregon.

Proposal has been reconsidered in light of the information supplied with your December 2 letter; however, as explained in my letter, this arrangement calls for further encroachment on Railroad property, which the Railroad cannot approve. If the State wishes to proceed with its construction in line with my letter of August 17, 1966, will you please advise.

Yours very truly,

W. G. Johnson
HSD

Routing

Morgan
Decker
Bond
Barbee
Walker
Glenn
Swan

Pease
Morelock
Trout
Scott
Wills
1 Litchfield
Olson

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JAN 13 1967
CONSTRUCTION
DIVISION

cc. A. E. Johnson

RECEIVED
OCT 20 1966
ENG
I-405-8(17)303
7276

October 19, 1966

AIRMAIL
Mr. James W. Diffenderfer
115 East Benedict Avenue
Haverton, Pennsylvania 19083

Dear Mr. Diffenderfer:

Re: Fremont Bridge Section
Stadium Freeway

Since our last contact with you concerning your assignment on the east and west interchange areas of the proposed crossing of the Willamette River, we have undertaken the redesign of the east end of the structure. I advised you of the problems involved with this matter sometime ago.

We have about completed our work on the lay-out; however, before asking you to proceed with the assignment on the east side, I have undertaken to construct a model of the new design so that we can be sure of its effect on the Railroad property. We expect that this model will be completed in less than two weeks. Following our study of it, we will communicate with you further.

I am also including copies of correspondence between the Union Pacific Railroad Company and Mr. T. W. Litchfield, Utilities Liaison Engineer. They are dated several months ago but I am not sure whether you have had the benefit of the information contained therein.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

F. B. Klaboe
Assistant State Highway Engineer

cc: Forrest Cooper
R. L. Porter
Tom Edwards
F. D. Morgan
T. W. Litchfield
A. E. Johnson

FBK:erb

Enclosures (letter August 17, 1966 from Union Pacific RR Co. to F. D. Morgan; letter 6-20-66 from T. W. Litchfield to UPRR Co.; letter from UPRR Co. to Forrest Cooper 5-3-66.)

UNION PACIFIC RAILROAD COMPANY

TRANSPORTATION DIVISION

DEPARTMENT OF OPERATION

W. G. JOHNSON
SUPERINTENDENT
OREGON DIVISION

5328 NO. LARRABEE AVE.
PORTLAND, OREGON 97227

AUGUST 17, 1966

File Ref. D 9010 - 32 - 17

Routing

Morgan
Dacker
Bond
Barbee
Walker
Glenn
Swan

Peas
Morelock
Trout
Scott
Wills
Litchfield
Olson

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AUG 22 1966
CONSTRUCTION DIVISION

Mr. F. D. Morgan,
Construction Engineer
Oregon State Highway Department
Salem, Oregon 97310

Atten: Mr. T. W. Litchfield,
Utilities Liaison Engineer

Dear Sir:

Easement for Highway Structure,
R/W Files 36087 and 37127
East Fremont Interchange Section - Stadium Freeway
Multnomah County
Project No. I-405-8(4)303

Reference is made to your letter of June 20 concerning need to relocate and modify Railroad buildings and provide for future facilities in connection with the State's proposed construction of Fremont Bridge and E. Fremont Interchange in Portland under the above-named project.

In reviewing your letter it appears to us that the State has overstressed the matter of providing temporary safeguards during construction particularly since the installation of adequate shelters would, in itself, be hazardous to Railroad personnel and other people utilizing and working in the areas underneath and would interfere with operation of Railroad and its tenants, thus creating many problems in this respect. Furthermore, it is unthinkable that, during construction of the Bridge, the Railroad could carry on an operation underneath such as we have now in our Yardmen's Locker & Toilet Building where at times some 300 Trainmen use the facility in a day.

For these reasons and as pointed out to you in my May 3 letter, the proposal to either perform your steel erection on weekends or during other so-called nonworking periods or to provide temporary protection over our National Carloading Building is not acceptable and the building must

be relocated as indicated previously. Furthermore, do not feel that the State is providing for minimum interference when it proposes to attempt its pier construction within confines of the Carloading Building.

There are, in fact, many hazards other than those defined as structural which can and do occur long after construction is complete. For example, the possibility of accidents on overhead highway structures involving trucks carrying inflammable materials which could spill over the sides offers a real hazard to any buildings underneath or nearby and their occupants.

Although the Railroad has indicated it desires to retain the right to rebuild within the easement areas, we certainly do not anticipate rebuilding with any structures such as the wood frame buildings now occupying these areas.

While the bridge is being constructed the State, of course, can relieve itself of responsibility by requiring its Contractor to furnish so-called safeguards and insurance. On the other hand, the Railroad after construction would have to look to each individual case for responsibility where damage occurs to the railroad except from the overhead structure itself. Since the proposed Fremont Bridge structure will be double-decked and extremely high, carrying very fast vehicular traffic, likelihood of the Railroad being so involved in a number of instances is certainly not remote.

With respect to considering the Carloading Building as Railroad operating property, as you know, a similar situation was dealt with in connection with the E. Marquam Bridge Interchange construction over Portland Traction Company's property and accordingly we do not consider the Bureau of Public Roads' regulations referred to in your letter, applicable. This Railroad Company is very well familiar with the limitations which the Highway Department would impose from the E. Marquam Bridge Interchange negotiations and, consequently, as you know, an easement agreement has not been consummated incorporating those restrictions.

As a matter of information, removal of the Railroad's spur track to the Linde Air Products Co. is covered in our industry contract with Linde, which provides for removal of the track beyond clearance point by the Railroad who shall pay to the Industry salvage value for the usable material between the clearance point and Linde's property line less cost of removal. This takes in that portion of the track occupying the city streets. However, inasmuch as the State's construction renders the spur track completely useless and the Railroad would not be served by retaining any portion thereof, the State should pay for removal of the remainder.

You were informed in the opening paragraph of this letter that construction of the Fremont Bridge or installing protective shelters over the Railroad's Yardmen's Locker & Toilet Building is out of the question since our employees use the building on a 24-hour, 7-days-a-week basis. Accordingly, the State should make plans for relocation of this facility in line with previous correspondence and discussions.

After considering the foregoing, will you please advise the State's willingness to proceed along the lines discussed in my letters of October 5, 1964 and April 14, 1966.

Yours very truly,

W. J. Johnson

COPIES TO:

A.W. PARSONS
R.L. PORTER
F.B. KLAUSE
TOM EDWARDS

} FOR INFORMATION ONLY — NO REPLY WILL BE MADE UNTIL MR DIFFENDERFER'S REPORT IS COMPLETE.

10-12-66
L

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OCT 13 1966
OFFICE OF
STATE HIGHWAY ...

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SEP 23 1966

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MEMO TO FILE

Salem, Oregon
September 22, 1966

All costs in connection with the work performed by Mr. James W. Diffenderfer, who is serving as a consultant to the Department in making evaluations, reports and general consultation on the effect of the Fremont Bridge, I-405 construction upon the operations of the Union Pacific, the Spokane, Portland and Seattle and the Portland Terminal Railroads should be charged to prefix 626-2525, Fremont Bridge Section, Federal-Aid Project I-405-8(4)303.

L. H. Young
Office Engineer

CHH:ed
cc: R. L. Porter
D. H. Mosbring
C. H. Nelson
T. W. Litchfield
R. H. Chase

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SEP 16 1966
FOR FILING

I-405-8(17)303

7276

September 15, 1966

1017"

Mr. James W. Diffenderfer
115 East Benedict Avenue
Riverton, Pennsylvania 19083

Dear Mr. Diffenderfer:

As you know, I was out of the state for the week of September 5 and so did not receive your letter until returning to the office.

Since our last meeting, a complication in the work you are performing for us at the East Fremont Interchange has arisen. We find that the facility as designed is not adequate to handle the projected traffic volumes stipulated under the "Highway Capacity Manual, 1965" just released. It appears that some slight revisions will be necessary which will have a direct bearing on our dealings with the National Gas-leading Company.

We are attempting to analyze the problem and hope to come up with a solution within the next three weeks. It is, therefore, our suggestion that you delay doing any further work that concerns the East Fremont Interchange until you hear further from us.

The contemplated changes would have no effect on the West Fremont problem and we would appreciate it if you would continue the analysis at this site.

The letter that you sent to us for forwarding to Mr. Kenneth L. Jones has not been transmitted. I am returning it to you and suggest that you hold it until sometime in the future when we are more set on our design.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

F. R. Klabee
Assistant State Highway Engineer

cc: Forrest Cooper
R. L. Porter
Victor D. Wolfe
Jack Sollis
A. E. Johnson F. D. Morgan
G. E. Rohde
I. D. Marchant
D. J. Barbee
T. W. Litchfield
bbc.

FRKierb

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

RECEIVED
SEP 6 1966
OFFICE OF
STATE HIGHWAY ENGINEER

September 3, 1966

Mr. F. B. Klaboe
Assistant State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310

Dear Fred:

The one portion of the Union Pacific Albina Yard problem in connection with the East Fremont Interchange structure at Portland that is not clean-cut is the National Carloading facility.

After some study of this situation, I would like to get some formal reaction, if possible, from National Carloading, to some of the possible alternatives. These were discussed informally when I was in Portland three weeks ago with Mr. Kenneth Jones, National's Branch Manager, who was both most helpful and cooperative.

Judging from his reaction, I would say that you have a real ally in Mr. Jones. I recognize that the Union Pacific, as the real owner of the property, can come up with all kinds of claims and counter-claims, but it is pretty difficult to refute the opinions of a sole tenant for 20 years, for whom this facility was built and who has every intent of staying there, so much so that he is willing to live with the bridge conditions by seeing to it that the proposals do not worsen his situation, and even to suggest that he move out during the construction period, only to return upon completion.

Therefore, with your approval, I would like to suggest that the enclosed letter be sent to National Carloading, partly to get a formal reaction to these suggestions and partly in repense to Mr. Jones' request that he have something to send to his home office, who had been inquiring as to the effect of the bridge upon their operations. I have clearly stated that I am in no position to make any offers or firm proposals. I will have other definite recommendations to make to you in my report with respect to dealing with the railroad on this matter, whether or not we get any further reaction from National.

A copy of the proposed letter is enclosed for your files. If the letter meets with your approval, please forward it in the envelope provided. If not, please make the necessary corrections or comments, and return it to me.

Cordially,

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

September 3, 1966

Mr. Kenneth L. Jones
Branch Manager
National Carloading Corporation
1013 North Knott Street
Portland, Oregon

Dear Mr. Jones:

Several weeks ago, serving in the capacity of a consultant to the Oregon State Highway Department, I discussed with you some possibilities with respect to pier locations for the East Fremont Interchange in the vicinity of the warehouse used by National Carloading at Portland. We also considered ways to offset any adverse features necessitated by such construction, as well as opportunities to improve your operating conditions by taking advantage of bridge construction requirements.

State Highway Department drawing No. 21792 (April 7, 1966) showed the location of a pier inside the wall of your warehouse, blocking interior floor space and portions of doorways #5 and #6. Its companion pier would be about 50' away from the wall (to the nearest side of the pier). This would be about on line with the bottom edge of the embankment along North Interstate Avenue and nearly opposite doorway #3.

Drawing No. 19514 (December 1963) showed an alternate pier location outside of the warehouse building. Even the 20' x 25' footing for the pier would probably be outside the building wall. However, the pier at this location would prevent truck access to adjacent portions of doorways #6 and #7 and would also usurp about 23' (measured from the wall) of driveway and parking area at these doorways. On the other hand, this alternate pier location permits the companion pier to be located closer to N. Interstate Avenue, about 20' east from the toe of the embankment and vitrually in line with two adjacent piers in the same bent.

Viewing this impartially, I believe the latter alternative offers possibilities for a fair and equitable solution to all parties concerned. All other matters pertaining to the railroad properties having been resolved to the satisfaction of all parties, I would propose that the Highway Department make the following provisions, in retaining the National Carloading warehouse on its present site, for the reasons indicated within parentheses:

orig rec'd to Diffenderfer 9-15-66

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

1. Build a 20' one-story extension on the north end of the warehouse, on top of the existing concrete platform (to compensate for truck dock space blocked by pier location near doors #6 and #7)
2. Build a retaining wall at least 210' long along the face of the three piers, generally parallel with N. Interstate Avenue and ranging from 70' to 75' from the building wall to the face of the retaining wall (to compensate for driveway and dock area blocked by the 10' diameter pier located 18' from the wall of the warehouse, or 23' to the east side of the pier, by widening this area approximately 23').

I concur with your opinion that the overhead structure, some 91' above the ground and about 67' above the warehouse roof, will be no real detriment, but could even have some small ancillary benefits to the warehouse operation. The office would be shielded to some extent from the afternoon sun and over half the building would be under cover, protecting much of your operation from rain and sun.

I would appreciate your reaction to these proposals as they pertain to your operations, recognizing that I am in no position to make any offers or firm proposals, but that I am simply trying to reach a solution which is satisfactory to those concerned with or affected by this project. I recognize, too, that National Carloading is not the owner of the property. However, this warehouse was built specifically for National Carloading almost 20 years ago by the Union Pacific Railroad, National Carloading has been the only tenant for all these years, and National Carloading, if anyone, should know best what its needs are and how its operations would be affected.

Any preferences, suggestions, and opinions you have with respect to these proposals and alternatives would sure be appreciated.

Sincerely,

James W. Diffenderfer

BC: Mr. F. B. Klaboe, OSHD

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SEP 6 1966
OFFICE OF
STATE HIGHWAY ENGINEER

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SEP 10 1966
CONSTRUCTION
DIVISION

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JAMES WILSON DIFFENDERFER .. 115 EAST BENEDICT AVENUE .. HAVERTOWN, PENNSYLVANIA 19083

Porter

September 10, 1966

RECEIVED
SEP 15 1966
OFFICE OF
STATE HIGHWAY ENGINEER

Mr. L. P. Hoy
Chief Engineer
Spokane, Portland and Seattle Railway
1101 N.W. Hoyt Street
Portland, Oregon

Mr. Richard Thomas
Chief Engineer
Portland Terminal Railroad Company
Room 202 Union Station
Portland, Oregon

Gentlemen:

Pursuant to conversations with you and/or your representatives four weeks ago, I have outlined in the enclosed sketches a number of alternatives relative to the problem at the N.W. 14th Avenue-Thurman Street crossing, in connection with the construction of the Fremont Bridge and the West Fremont Interchange. These are discussed in the enclosed memorandum.

The problem is caused by the fact that the pier is to be located at the intersection of N.W. 14th Avenue and Thurman Street, as shown in Sketch No. 1 of PE48D dated June 15, 1966 and a State Highway Department Plan dated June 1966, copies of which I believe you have been furnished. This pier location necessitates relocation of the highway crossing over your tracks.

In my role as a consultant to the Oregon State Highway Department, I would appreciate having your comments and preferences with respect to these various alternatives, together with any changes you belive are justifiable. The purpose is to obtain a crossing layout which does not make worse (but, hopefully could improve!) the railroads' situation and at the same time provide a safe and efficient crossing at the minimum of cost to the Highway Department.

NOTED
F. B. KLABOE

After you and affected railroad departments have had an opportunity to study these, I would appreciate your replying to me. It should be understood that I am in no position to make any firm proposals to you with respect to this matter nor am I expecting you to be committed to any suggestions or recommendations which you will be good enough to make, but rather that we are seeking a solution acceptable to all concerned.

RECEIVED
SEP 21 1966
ENGINEERING
DIVISION

Cordially,

J. Wilson Diffenderfer

copies to
Barbee
Litchfield
Sollis
9-15-66

bc: Mr. F. B. Klaboe
Asst. State Highway Engineer
As information to keep you up-to-date
I am continuing other phases of this study
while awaiting reply from Railroads on this. Jim 9/13

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

Subject: Proposed Railroad Crossing - N.W. 14th Avenue and Thurman Street
West Fremont Interchange, Portland, Oregon
Commentary on alternatives

MEMORANDUM OF COMMENT

Present Railroad Layout

Present track layout and location of crossing are shown on the first sketch. The situation is far from ideal, but is one which both rail and highway traffic have apparently tolerated for a long time. The crossing involves eight tracks, including one turnout, the greater portion of which is included within the limits of crossing paving. Constant switching moves on both the SP&S tracks and the Portland Terminal tracks delay highway traffic, the magnitude of which, in turn, is a deterrent to efficient rail operations. There are two crossing watchmen on duty 16 hours a day; one watchman, on third trick at night. The daytime tours of the watchman on the N.W. Front Avenue side are 6 am - 2 pm and 2 pm - 10 pm. The watchman on the 14th Avenue side has tours of 8 am - 4 pm and 4 pm - 12 midnight.

The Fremont Bridge construction necessitates placing a pier on the south side of the tracks at the intersection of N.W. 14th Avenue and Thurman Street, requiring relocation of the crossing.

One proposal considered relocating the crossing south (toward downtown) of the present crossing. Aside from any highway traffic problems this location might create, it would place the crossing even more in the midst of the SP&S switching operations than is the present crossing. Furthermore, there would be at least two turnouts within the limits of the crossing. While the turnout on the inbound main track could be relocated, the crossover on the Middle Yard Lead is so strategically located that it could not be shifted. The intensity of the SP&S switching movements and the fact that virtually every move fouls this location make shifting the crossing in this direction most impractical.

A more recent proposal is contained in the State Highway Department Plan dated June 1966 and is shown in hatched outline on the first sketch attached. It is on the opposite side of the present crossing. It provides for a crossing generally 50' wide with two lanes of highway traffic in each direction and with track layout as at present. Under this scheme, the new crossing would involve ten (10) tracks, two more than at present, and would include two complete turnouts and a portion of a third. This would seem most objectionable from a railroad operating standpoint, and most costly to construct and maintain. The additional number of tracks to be crossed also makes crossing protection that much more difficult for the railroad and makes highway travel over the crossing that much more hazardous. While it is preferable to reduce the number of tracks to be crossed from the eight existing today, the crossing should be so aligned and the tracks so rearranged as to have, at best, no more than the present number of tracks to be crossed. Studies of rail traffic made at the crossing by this consultant also revealed that only one-half of the railroad switching movements would block highway traffic if the crossing were located as shown in this Alternative West.

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The directional flow of highway traffic over this crossing greatly favors an alignment oriented to Thurman Street rather than N.W. 14th Avenue. The flow of traffic between Thurman Street and the downtown side of N.W. Front Avenue generally ranges from three to four times as great as the total of the flow in all other directions over the crossing, based upon checks made during various rush hours and other periods of the day in a recent week. Since a crossing located just west of that proposed in the June 1966 plan (Alternate West) would also avoid interference from all but about 25% of the switching movements blocking the present crossing, a "Recommended Site" is shown not only on the first sketch attached, but also included in each of the subsequent sketches showing alternative track layouts. Building this crossing almost perpendicular to the majority of the tracks reduces the cost of crossing construction, the amount of track work covered with paving and provides an improved sight-distance situation for highway traffic, particularly that coming from N.W. 14th Avenue.

Alternate Railroad Layout "A"

This sketch shows one possible layout, relocating certain tracks and switches, to remove switches from the crossing area, to keep the number of tracks in the crossing to no more than the present, and to preserve safe sight distances. It relocates the present crossover between the two main tracks to a new location approximately at the site of the present crossing (1). This requires shifting one turnout (2), to provide room for the crossover. The switch from the outbound main track to #15 Track is relocated downtown from this crossover (3). The 30-Yard Lead is shifted as close to the Middle Yard lead, as possible, to improve clearances and sight distances at the proposed bridge pier.

Alternate Railroad Layout "B"

Since the extension of Track #15 in Layout"A", between the crossover to the main track and the main track turnout, was rendered almost useless by this extension, Layout"B" shows this portion of #15 Track removed. This is highly recommended, if the railroads find no pressing need for this short portion of #15 Track, since it greatly simplifies the railroad layout and reduces the complexity of the crossing protection problem. In all other respects, Layout "B" is the same as Layout "A".

Alternate Railroad Layout "C"

If the present length of #15 Track is critical and considered by the railroads as absolutely necessary (it appeared to be occupied with cars most of the time only as far west as the end of the track proposed in Layout"B"), tracks and switches could be relocated as shown in Layout"C". Here, the switch to #15 Track is shifted slightly (1) to take it out of the new crossing location, and the main track crossover (2) and other turnout (3) are relocated as in the other two alternatives.

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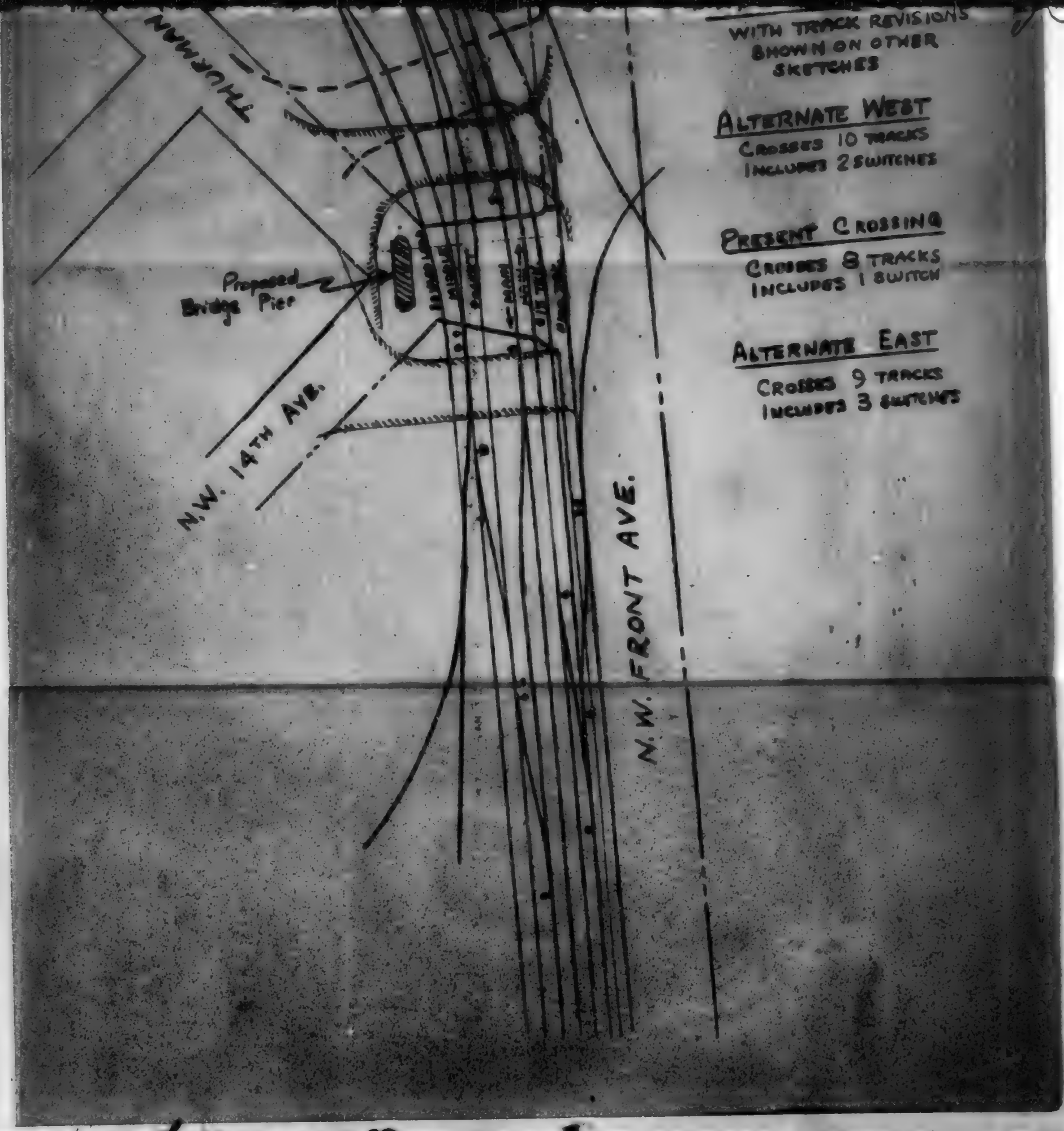
Other Alternatives

It is recognized that is a layout so complex, numbrous alternatives could be proposed, each with certain refinements which could represent improvements over these which have been suggested.

One could involve a more oblique alignment of the crossing, more closely approximating the bearing of Thurman Street and, thus, recognizing the tremendous interchange of traffic between Thurman Street and the downtown section of N.W. Front Avenue. This could be so aligned as to avoid any railroad turnouts in the crossing, if the reasonableness of a crossing less than 50' wide could be accepted. The problem is that in all previous plans, including the present operation, the crossing has been used as a weaving and merging section for highway traffic, utilizing a present crossing width of almost 100'. It would make good sense to have no more then three lanes over the crossing: (1) for trafficsinbound from Thurman to N.W. Front; (2) for traffic from both N.W. 14th Avenue and Thurman Street outbound on N.W. Front Avenue; and (3) for traffic to Thurman Street from N. W. Front Avenue. This, however, is a matter to be resolved with the City Department of Traffic Engineering. It would involve an angle of about 60° with N.W. Front Avenue and create some problems with turning radii. Unless there could be three lanes (or less) this alternate would involve track changes, to avoid having a condition worse than at present, and presents some sight distance problems with respect to the proposed bridge pier.

Other alternatives could involve more elaborate changes in the track layout. While these might be ideal from a railroad operating standpoint, their necessity can hardly be attributed to this project. The purpose here is to create the best layout for both rail and highway traffic, making improvements where possible, at minimum cost.

The railroads have been requested to indicate which of the alternatives in both crossing location and track layout they prefer, together with such changes or modifications which they may care to suggest, bearing in mind the purpose not to make worse the railroads' situation and at the same time to keep highway costs to a minimum, including the costs of constructing the crossing and relocating tracks, if any.



WITH TRACK REVISIONS
SHOWN ON OTHER
SKETCHES

ALTERNATE WEST

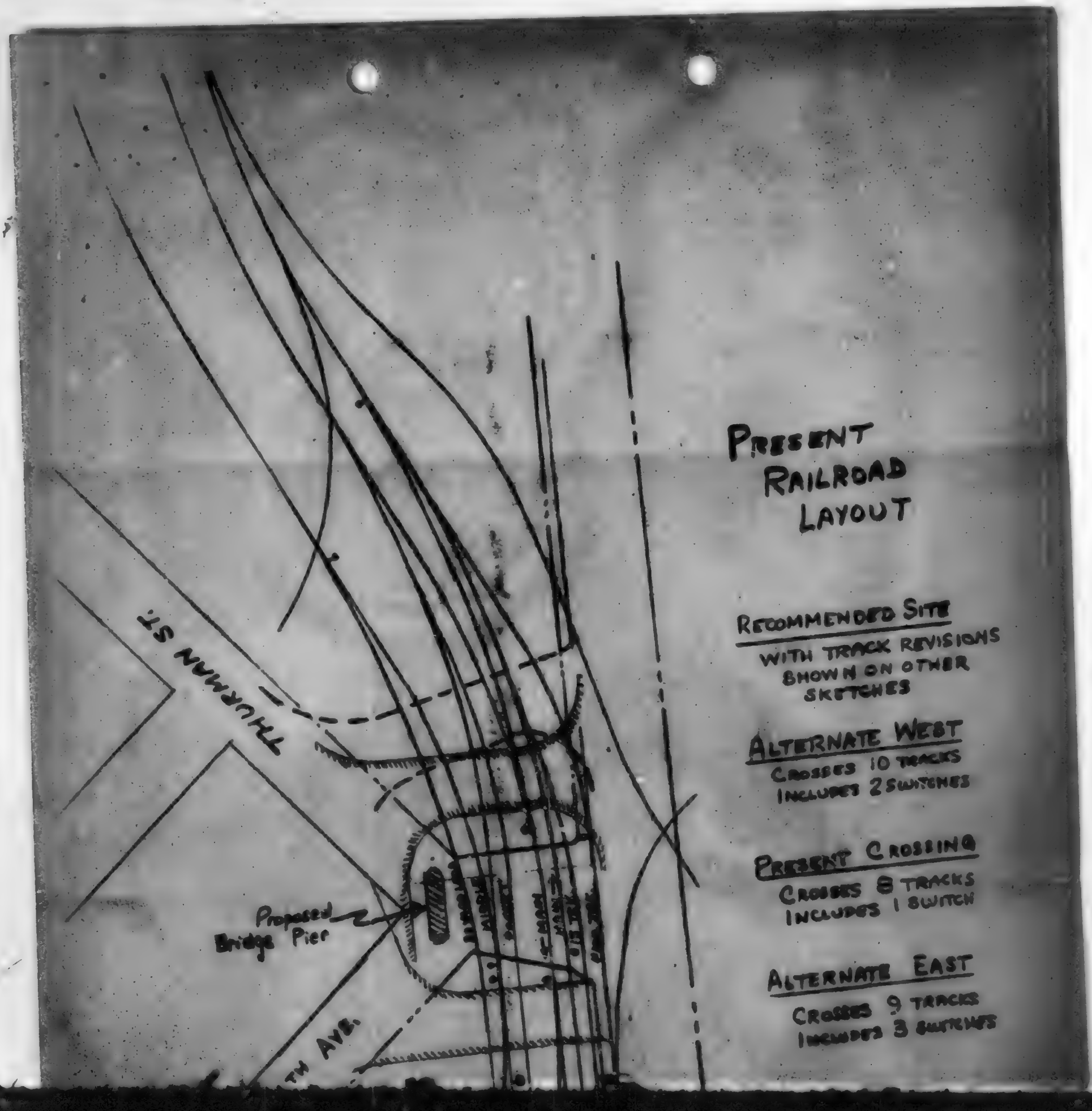
CROSSES 10 TRACKS
INCLUDES 2 SWITCHES

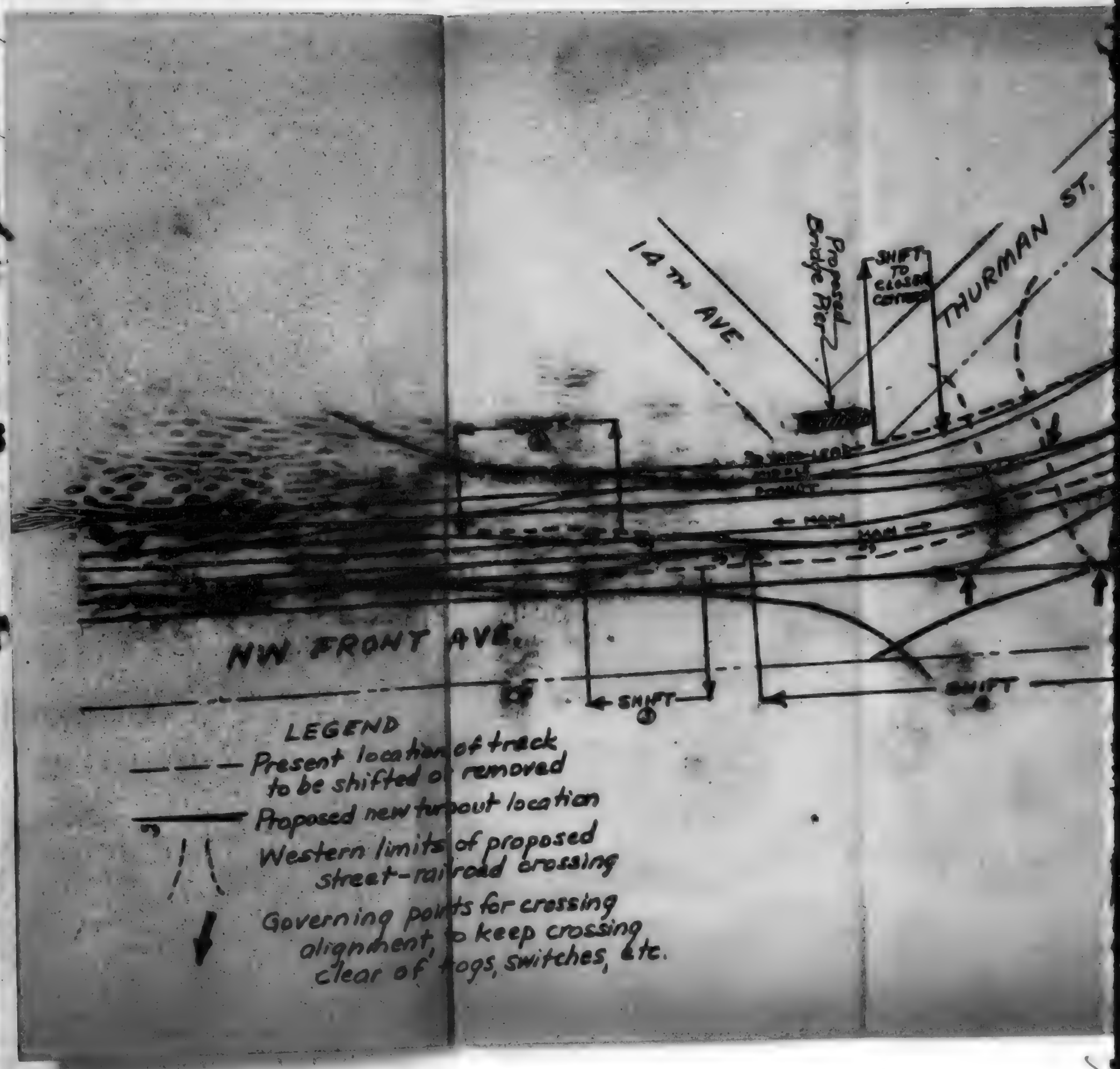
PRESENT CROSSING

CROSSES 8 TRACKS
INCLUDES 1 SWITCH

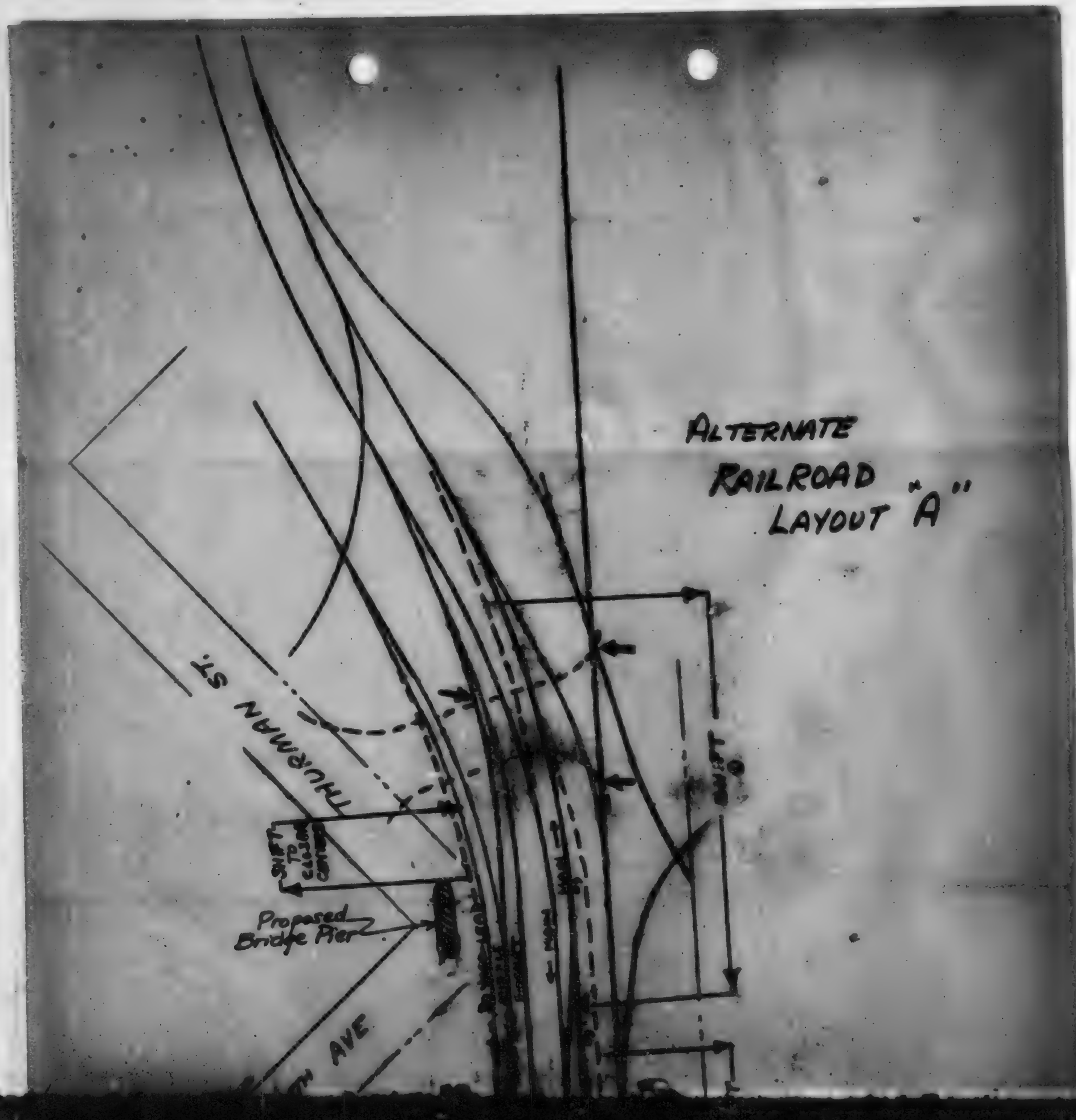
ALTERNATE EAST

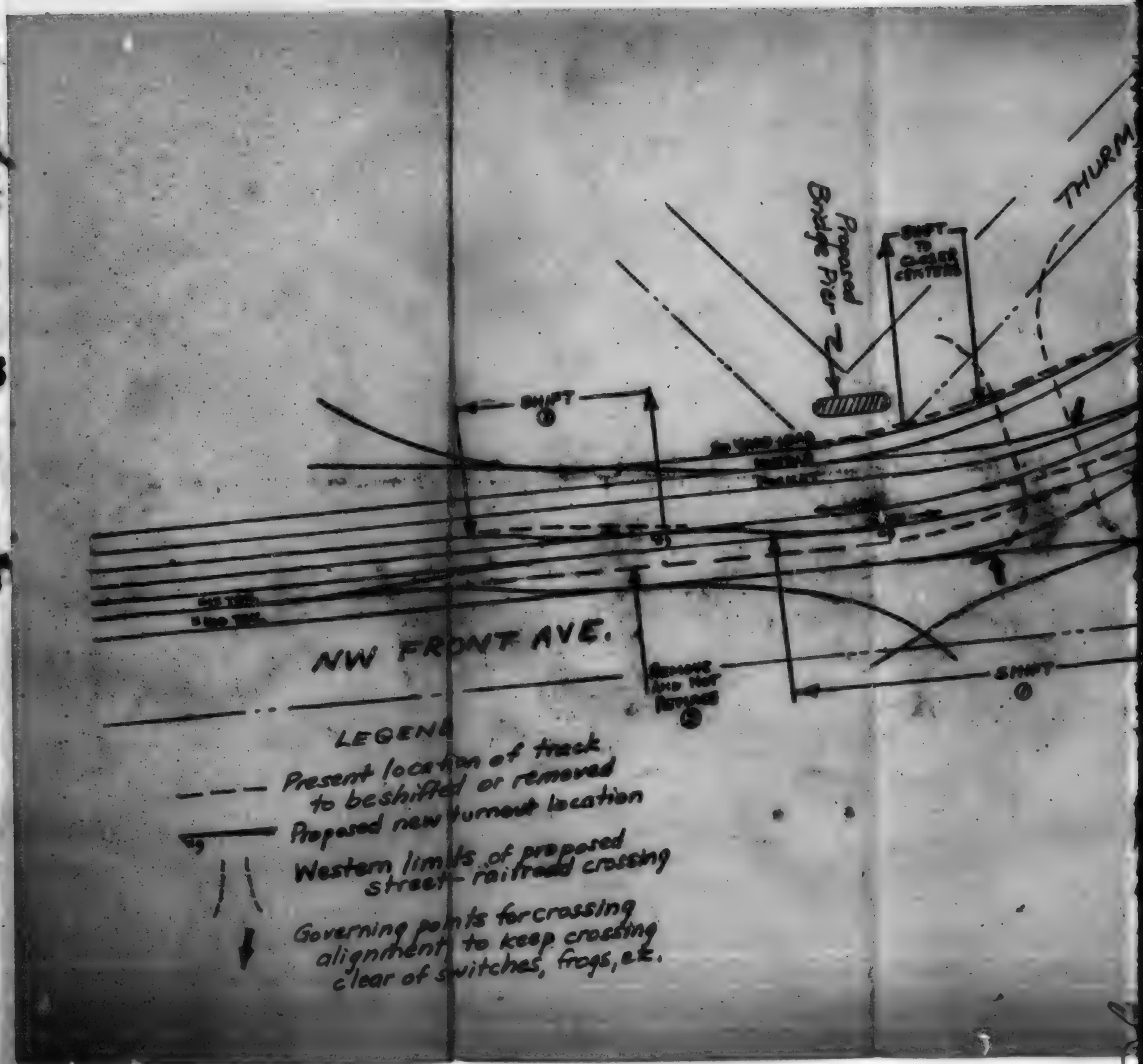
CROSSES 9 TRACKS
INCLUDES 3 SWITCHES

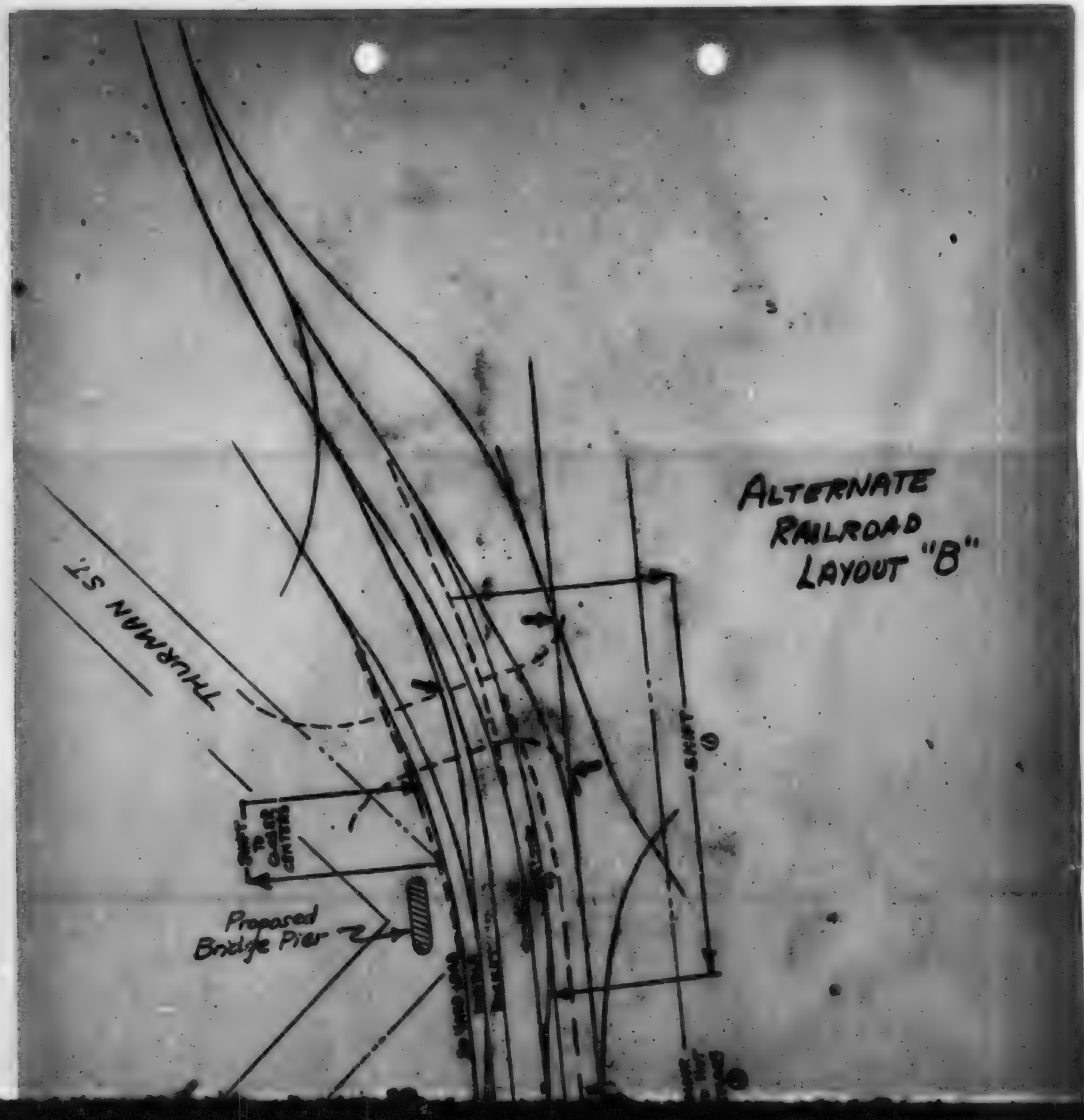

THURMAN ST.
Proposed Bridge Pier
PRESENT RAILROAD LAYOUT
RECOMMENDED SITE
WITH TRACK REVISIONS SHOWN ON OTHER SKETCHES
ALTERNATE WEST
CROSSES 10 TRACKS
INCLUDES 2 SWITCHES
PRESENT CROSSING
CROSSES 8 TRACKS
INCLUDES 1 SWITCH
ALTERNATE EAST
CROSSES 9 TRACKS
INCLUDES 3 SWITCHES

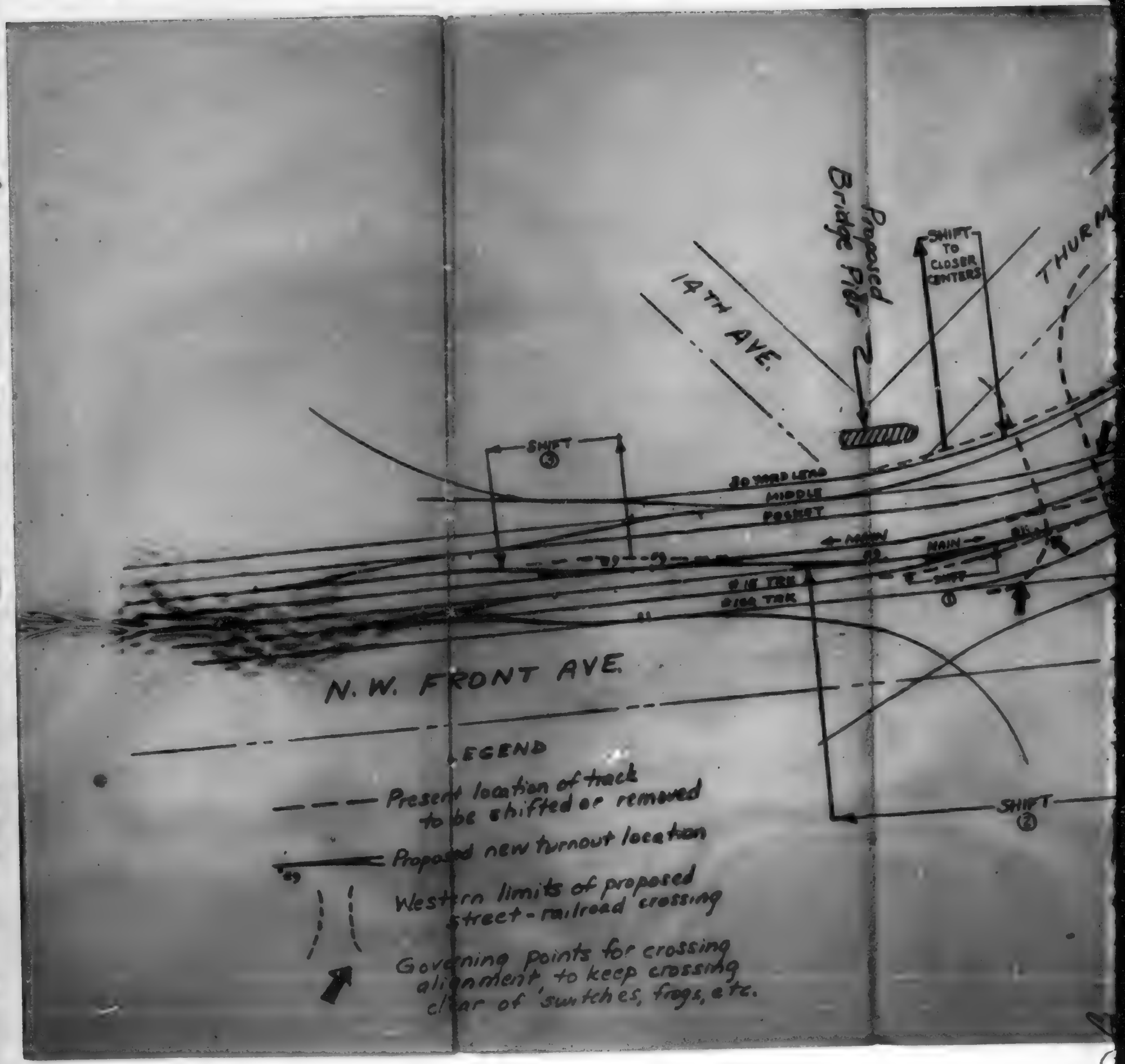

14TH AVE
Proposed Bridge Pier
SHIFT TO CLOSER CONTROL
THURMAN ST.
NW FRONT AVE.
SHIFT
SHIFT
LEGEND
Present location of track to be shifted or removed
Proposed new turnout location
Western limits of proposed street-railroad crossing
Governing points for crossing alignment, to keep crossing clear of frogs, switches, etc.

ALTERNATE
RAILROAD "A"
LAYOUT




Proposed Bridge Pier
SHIFT TO CLOSER CENTERS
THURM
SHIFT
NW FRONT AVE.
SHIFT
LEGEND
Present location of track to be shifted or removed
Proposed new turnout location
Western limits of proposed street-railroad crossing
Governing points for crossing alignment to keep crossing clear of switches, frogs, etc.


ALTERNATE
RAILROAD
LAYOUT "B"
THURMAN ST.
Proposed
Bridge Pier


Proposed Bridge Pier
14TH AVE.
SHIFT TO CLOSER CENTERS
THURM
SHIFT
20 YARD LEAD
MIDDLE
FOREST
MAIN
MAIN
SHIFT
SHIFT
N. W. FRONT AVE.
LEGEND
Present location of track to be shifted or removed
Proposed new turnout location
Western limits of proposed street-railroad crossing
Governing points for crossing alignment to keep crossing clear of switches, frogs, etc.

ALTERNATE
RAILROAD
LAYOUT "C"
THURMAN ST.
SHIFT
SHIFT TO CLOSER CENTERS
Proposed
Bridge Pier
14TH AVE.

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AUG 18 1966
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I-405-8(17)303
7276

August 16, 1966

ATTN:

Mr. James W. Diffenderfer
113 East Benedict Avenue
Riverton, Pennsylvania 19083

Dear Mr. Diffenderfer:

Reference is made to your August 12 communication in which you estimate a maximum of $4,000 on the fee portion of your bill for your work relative to the Union Pacific and Spokane, Portland & Seattle railroads in Portland. This is in connection with the proposed construction of Interstate 405.

This letter is to confirm that this amount has the approval of the Department as a limit for the assignment which will not be exceeded except by mutual agreement.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

MLP:ms

bc/att Bureau of Public Roads

Forrest Cooper
F. B. Klaboe
Victor D. Wolfe

August 12, 1966

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon

Dear Mr. Porter:

After a study of the work involved and pursuant to your request of July 12, it would appear reasonable to set a limit of four thousand dollars ($4,000) on the fee portion of my bill in connection with my work applicable to the effect of the Fremont Bridge, Interstate 405, work upon the operations of the Union Pacific, the Spokane, Portland, and Seattle, and the Portland Terminal railroads in Portland.

While it is understood that this limit may be exceeded only by mutual agreement, I can assure you that I shall do everything possible to expedite the work and stay well within this amount.

Sincerely,

James W. Diffendorfer

James W. Diffendorfer

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

July 5, 1966

Mr. Forrest Cooper
State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310

Dear Mr. Cooper:

In connection with an evaluation to be made of the proposed plans of the Oregon State Highway Department for the location of Interstate Route 405 as it affects railroad operation in and about the city of Portland, Oregon,

I agree to serve as a consultant to the Oregon State Highway Department for the purpose of making such evaluations, furnishing opinions, making reports as may be required, and being available for general consultation, exercising my best efforts consistent with the standards of the engineering profession, and to furnish such other information pertinent to this evaluation and project, as I may be requested and able to do;

In return for which I would propose to be compensated and reimbursed upon the following basis:

1. For time spent in study, analysis, evaluation and reporting of the subject matter, together with consultation, and time spent in the most expedient means of travel between Philadelphia, Pennsylvania, and Portland, Oregon, and points in and about Portland and Salem, Oregon, the sum of one hundred fifty dollars ($150) per day or twenty dollars ($20) per hour for periods less than one day.
2. For appearance in court as an expert general consultant witness and travel related thereto, the sum of one hundred fifty dollars per day ($150).
3. All expenses for travel between Pennsylvania and Oregon, travel incident to the study of the subject matter, subsistence expenses during travel and while engaged in work in Oregon.
4. Such other expenses as may be mutually agreed upon.

An itemized statement would be furnished for all expenses and a report made of all time spent in connection with the work. I appreciate this opportunity to serve you.

T.J. copy to BPR, Dear Ted Dec

James W. Diffenderfer

James W. Diffenderfer
Registered Professional Engineer
Oregon #5280 Penna. #6929-E N.J.#12544

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COMMISSIONERS
GLENN L. JACKSON, CHAIRMAN
MEDFORD
KENNETH N. FRIDLEY, MEMBER
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND

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STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

July 21, 1966

AIRMAIL

Mr. James W. Diffenderfer
115 East Benedict Avenue
Silvertown, Pennsylvania 19083

NOTED
R. L. PORTER

Re: Fremont Bridge Approaches
I-405

Dear Mr. Diffenderfer:

903

Your letter of July 18, 1966 to Mr. R. L. Porter has been referred to me for reply. In this letter you requested certain information to review prior to your trip to Portland.

Herewith you will find an aerial photograph of the entire Fremont Bridge area taken in 1964 on which we have shown the centerlines of the Fremont Bridge and its connecting ramps on both the east and west sides of the Willamette River. The scale of this photograph is 1"=200'. You will also find a print of a drawing entitled "Proposed R.R. Crossing, N. W. 14th and Thurman St., West Fremont Interchange", which is drawn to a scale of 1"=50' and shows the proposed revision as well as the existing crossing of the tracks owned by the Spokane, Portland and Seattle Railway and the Portland Terminal Railroad Companies (formerly the Northern Pacific Terminal Company of Oregon). The estimated average daily traffic for 1965 at this crossing is 7,000 vehicles with a maximum daily traffic of 10,000 vehicles.

I hope you will find this information to be adequate for your needs until you have the opportunity to inspect the locations in the field. I look forward to seeing you at our meeting of August 9 in Portland.

Very truly yours,

TWL:bjm
encs.

F. D. Morgan
Construction Engineer

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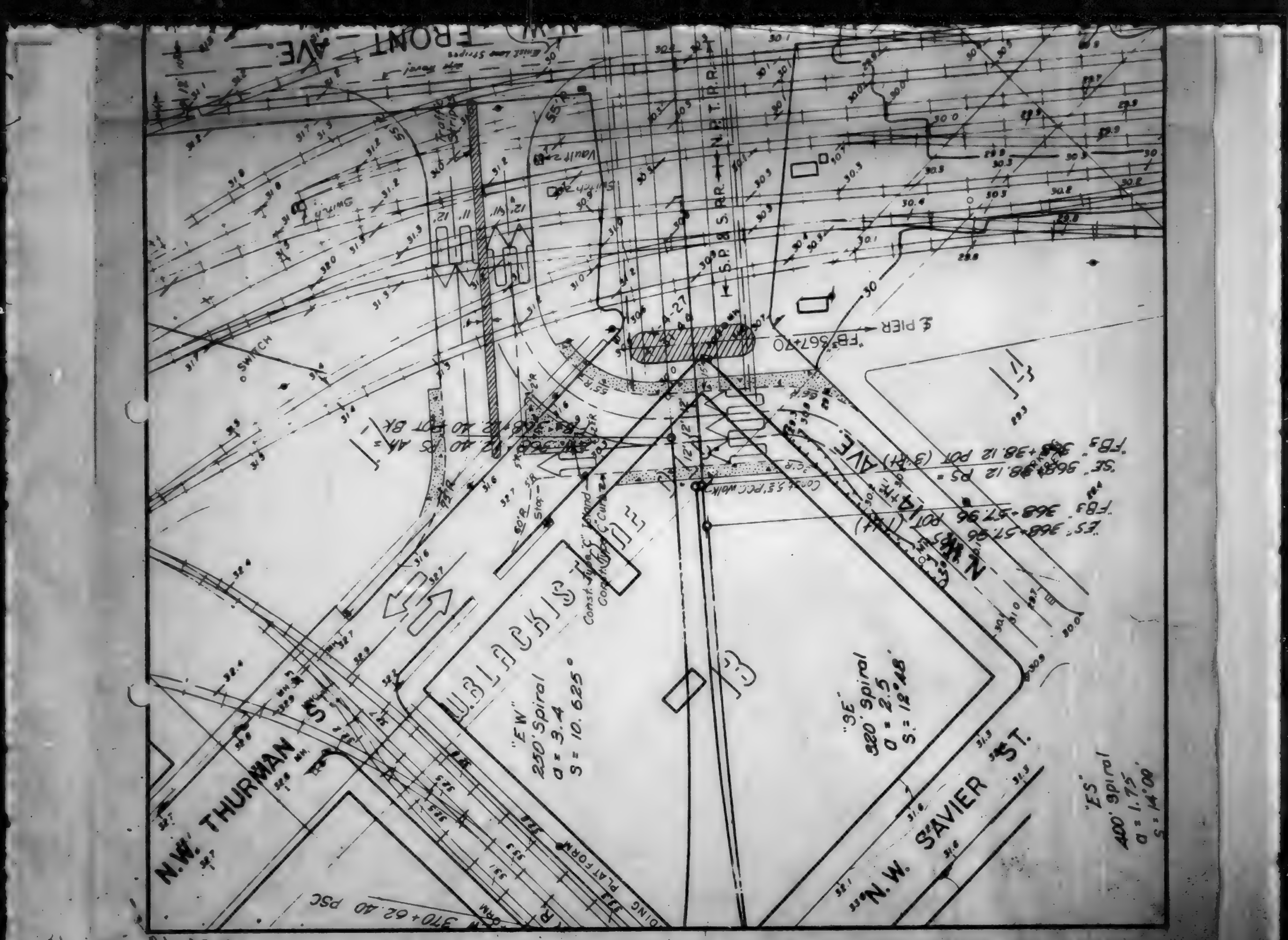
OFFICE OF
STATE HIGHWAY ENGINEER

By ORIGINAL SIGNED BY
T. W. LITCHFIELD

T. W. Litchfield
Utilities Liaison Engineer

cc: Forrest Cooper (w/enc.)
R. L. Porter "
(Assign.: FBK-903) -- F. B. Klabee "
Victor D. Wolfe "
A. E. Johnson "


N.W. FRONT AVE.
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N.W. NICOLAI ST.
"EW" 250' Spiral D = 3.4 S = 10.625°
"SE" 320' Spiral D = 2.5 S = 18°48'
"ES" 400' Spiral D = 1.75 S = 14°00'
℄ PIER
"FB" 367+70
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N.W. FRONT AVE.

Fremont Bridge

RAMP

SWITCH

PA- ING

T. R.R.

OREGON STATE HIGHWAY DEPARTMENT
METROPOLITAN DIVISION

PROPOSED R.R. CROSSING
N. W. 14th & THURMAN ST.
WEST FREMONT INTERCHANGE

Metro Engr. A. E. JOHNSON Date June 1966

Scale 1"= 50' By H.H. McClure

A-30-18

I-405-8(17)303
7276

403

July 21, 1966

ALBANY
Mr. James W. Diffenderfer
115 East Benedict Avenue
Havertown, Pennsylvania 19083

Re: Fremont Bridge Approaches
I-405

Dear Mr. Diffenderfer:

Your suggested date to meet with Highway Department representatives at 9:30 a.m., August 9 is satisfactory. We suggest that the meeting be held in the office of the Metropolitan Engineer, Mr. A. E. Johnson, at 5821 N. E. Glisan Street, Portland.

Your suggested itinerary while in Portland appears to be entirely satisfactory. We can discuss it further at the August 9 meeting and determine if any changes are desired at that time. The data requested in your letter will be forwarded to you under separate cover in the next day or so.

I am looking forward to seeing you again, and we are confident that your appraisal of the situation will be of great value to our negotiations.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

F. E. Klaboe
Assistant State Highway Engineer

FEK:erb

cc: Forrest Cooper
R. L. Porter
Victor D. Wolfe
T. W. Litchfield (Enc. - Please immediately acquire the information requested by Mr. Diffenderfer and forward to him directly.)
A. E. Johnson (Enc.)

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

18 July 1966

Mr. R. L. Porter
Deputy State Highway Engineer
State Highway Department
Salem, Oregon 97310

Dear Mr. Porter:

Because of the uncertainties of the air travel situation, it seems best to plan a little in advance. If satisfactory with you, I shall plan to be in Portland on the morning of Tuesday, August 9, to confer with you and others you may designate in connection with the I-405 problem, and to begin my studies. Would it be convenient with you to meet in the State Highway Department offices in Portland at 9:30 a.m., before proceeding to the various sites? In reply, would you please designate the time you would prefer and in whose office you would like to meet, together with the specific street address.

Being mindful of the need for strict budgeting in all business, I can fully appreciate the BPR's desire for a limit upon the costs of this phase of the project, not to be exceeded except by mutual consent. I have in mind, from a preliminary review of the problem as you have pictured it, that most of the data I need can be gathered within the week at Portland by cramming in as many hours as possible (especially since first-hand knowledge of rail yard operations often requires observation of nighttime activities) and still allow time to confer with you by Thursday afternoon, to review with you my preliminary findings and gather together any loose ends. This would permit me to return east, to complete my analysis of the problem and make recommendations without your havings the expense of my subsistence in Portland. If, following that, you desired a personal conference or there was need to obtain more data, there should still be sufficient within a modest budget to provide for another short trip to Portland. If this brief work plan makes sense to you, I will plan to proceed on this basis.

From the data you have furnished, there appears to be some definite operating problems in connection with the SP&S property. However, these do not appear to be beyond reasonable economic solution. In this connection, it would be most helpful if you could send me for prior study the following items:

1. A railroad valuation plan or other plan at scale of 1"=100' or better, showing SP&S tracks in the portion bounded by NW 16th Avenue, NW Front Avenue, and Savier Street, including the street crossing of the railroad's tracks in its present location. I need to compare the present effect of this crossing upon the railroad's operations, as well as the effect of its future location. It would also be helpful to have:
2. Any traffic counts on the present street crossing of the SP&S tracks, especially if they showed the direction of movement.
3. Any aerial photograph which may be readily available of this particular area.

Although it is not clear from Design SIC and Sketch #1, I presume that there is a clear span west of pier 2W, so that the only real obstruction to SP&S sight distances for train movements will be that imposed by pier 2 W.

As you indicated, the UP problem is somewhat different, although there would seem to be no need to remove the buildings in the area shaded purple, especially if something could be done at pier 5 E, which in this plan goes right through the UP Clubhouse. There seems to be no justification to their demand that buildings well beyound the edge of the easement area be fireproofed. The Yardmen's L&T building, at this glance, appears to be an operating facility, but I question its need to be removed, while the status of the National Carloading facility is highly questionable and is, more than likely, non-operating. Do you have any aerial photographs and 1"=100' plans of this area which you could conveniently send for my use before coming to Portland?

I am confident that we will find satisfactory solutions to these problems and accomplish the objectives you have. I shall await your approval of the proposed meeting date and tentative plan of procedure, together with such plans as you may be able to send me.

Cordially,

James W. Dyffendefer

RECEIVED
JUL 20 1966
STATE HIGHWAY ENGINEER

RECEIVED
JUL 20 1966
OREGON
STATE HIGHWAY COMMISSION

I-405-9(17)343
7976

July 12, 1966

AIRMAIL

[redacted] W. Diffenderfer
115 East Benedict Avenue
Havertown, Pennsylvania 19083

Dear Mr. Diffenderfer:

Thank you for your July 5 letter outlining your fee schedule that would be applicable to the examination of the effect of Interstate 405 highway plans on the Union Pacific and Spokane, Portland & Seattle railroads in Portland.

I have discussed the contents of your proposal with the Bureau of Public Roads and have their general acceptance. In other words, the Bureau and the State of Oregon are agreeable to the fee of $150 per day or $20 per hour for periods of less than one day, plus reasonable expenses. Expenses can be billed as you suggest, based on actual invoices.

On the fee portion of your bill, the Bureau of Public Roads insists that a limit be set that shall not be exceeded except by mutual agreement. I suggest that we leave this matter open until you have had an opportunity to examine the situation and then we can agree on a limit that could be exceeded only by mutual consent.

We have two problems in connection with the Interstate 405 location. One, on the westerly side of the Willamette River, involves the Spokane, Portland & Seattle Railway Company; and one, on the easterly side of the river, affecting the Union Pacific Railroad Company. Enclosed is a sheet entitled "Design 81C" which indicates the proposed river structure and shows in general the location of the westerly pier as it may affect the S.P.&S. operation. The Railroad is not happy with this proposed design, not only

from the pier location, but because a city street which crosses its tracks between the intersection of Thurman Street, N. W. 14th Avenue, and N. W. Front Avenue will have to be relocated. The Railroad also claims that the proposed location of this pier will hamper its operation because of impaired sight distances, etc.

Much preliminary study has gone into the bridge design and it will be very difficult to make any major adjustment in the location of the westerly pier. Our problem is: are the Railroad's objections valid and, if so, what can be done to mitigate any damages to its operation.

The other area, involving the Union Pacific Railroad Company, is indicated on a Union Pacific drawing under date of July 31, 1964, which is enclosed. The areas tinted in purple represent an overhead easement that the State seeks to acquire. The approach to the Fremont Bridge in this area will be from 75 to 100 feet in the air and so far as the State is concerned, an overhead easement will suffice. Also indicated on this drawing are small red circles representing the proposed location of structural columns.

Situated within the area is a yardmen's washroom, a club building, and a forwarding company. The Railroad insists that a new washroom be constructed and that the clubhouse and the forwarding company be moved but that the Railroad retain the right to reconstruct any buildings in the easement area, either now or at sometime in the future. In addition, the areas tinted blue are Railroad buildings that they request be fireproofed.

So far, the Bureau of Public Roads has insisted we handle this as a right-of-way matter and compensate the Railroad in the amount of fair market value rather than move or adjust its facilities. Your opinion is requested as to whether or not these facilities, particularly the forwarding company, would be classed Railroad operating property so as to determine whether or not the Railroad should be compensated under the Bureau's Railroad Policy and Procedure Memorandum or its Right of Way Memorandum.

It appears probable that this matter may end up in a condemnation case and if so, your testimony will be desired; first, before a Public Utility Commissioner's hearing and, second, at the condemnation procedure itself.

We are anxious to have you proceed with this assignment as quickly as you can and our people can be made available to meet your convenience. If there is any further data you think desirable before you come to Portland, please let us know and anything available will be promptly forwarded.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

7-14 copy to Ted Bell

RLP:mm
enclosures

cc Forrest Cooper
F. B. Klaboe
Victor D. Wolfe
T. W. Litchfield
(A copy of the Union Pacific
(Harwing referred to is in Litchfield's files)

I 11C 5-8(17)-213
7276

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

July 5, 1966

Mr. Forrest Cooper
State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310

Attention: Mr. R. L. Porter

Dear Mr. Cooper:

To expedite approval by the Bureau of Public Roads, may I, in answer to your request of June 29, suggest the same fee arrangement for my services in connection with the I-405 planning work as we used with the Nevada State Highway Department last year on a similar project and which was really based upon the rate used in connection with the work I did for you in 1964.

This would be at the rate of one hundred fifty dollars ($150) per day or twenty dollars ($20) per hour for shorter periods where this would result in a savings to you, for time spent in consultation, study of the problems and reporting thereof, and the most expedient means of travel. In addition, there would be the normal travel expenses, expenses in the conduct of the project, and modest living expenses. The latter can be on whatever basis you prefer. In Nevada, there was last year a limit of fifteen dollars a day on subsistence, which, I believe, has since been raised slightly. Either some such flat limit as that or the payment of expenses based upon invoices is satisfactory to me. To cover the work quickly and economically, they also furnished me with a state highway department car, but if this is not possible or permitted in Oregon, I could use a rented car at the discount rate available to me, and have such costs included in the expenses.

For your convenience, I have enclosed a letter outlining these items, in the hope that it might be satisfactory to you, as well as a copy of my agreement in the Nevada study, which was quite similar.

It would be most helpful to have drawings and aerial photographs of the problem area, together with such other data you consider pertinent, prior to inspection of the site. I can then spend my travel time getting familiar with the job, although I do remember the area from having visited it in 1964.

7-11
copy to BPR
attn Tidlow

NO[illegible]
R. L PORTER

After you have obtained approval by the Bureau and indicated that you would like me to proceed with the work, it would seem advisable that we review the problem with you at the site and understand all facets of your phase of the problem before beginning my evaluation and data gathering, to furnish the opinions sought for your use and guidance. Therefore, I would appreciate your indicating what period would be most convenient for you to have such a meeting, following your receipt of authorization, so that I can make the necessary arrangements and work this trip into my schedule.

It would seem that we should be able to do this with an initial trip to Portland for meetings with you, study of the site, data gathering and investigation, and a preliminary review of findings and opinions, followed by a time of analysis and study back here, and a possible subsequent trip to Portland or Salem, to go over the matter in detail with you and clean up the loose ends. I want to work this out in the manner most satisfactory to you.

I appreciate having this opportunity to work with you again and will do my best to give you an even better job this time.

Cordially,

James W. Diffendefer

RECEIVED
JUL 11 1966
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUN 30 1966
FOR FILING

I-405.8(17)303
7276

June 23, 1966

Mr. James W. Diffenderfer
115 East Benedict Avenue
Riverton, Pennsylvania 19063

Dear Mr. Diffenderfer:

Thank you for your June 13 letter advising us of your availability for a railroad assignment in Portland.

The work will basically involve an examination of the State's proposed plan as it affects the railroad operation. We will like to have your opinion as to whether or not the proposed Interstate highway facility will inflict damage on the railroad operation and, if so, your recommendation as to a cure. The Bureau of Public Roads has requested that this matter be handled as a right-of-way procedure; however, if in your opinion some of the property can be properly classified as operating, then the railroad would be entitled to the cost of moving some of its facilities rather than simply being tendered the cash market value. As was stated before, I believe no tracks will need to be altered or shifted but several buildings that are used in connection with the Albina Yards operation may have to be removed.

The Albina Yards of the Union Pacific Railroad Company are on the east side of the Willamette River, and on the westerly side of the river this same crossing structure may affect some of the trackage of the Spokane, Portland & Seattle Railway Company. We will also like your examination of this problem and your opinion as to whether or not we will inflict damage on the railroad facility. We can send you drawings and other data prior to the inspection of the site if you so desire.

So that we may obtain Federal participation in the cost of your services, it is necessary that we agree on a fee arrangement before you start work. We will appreciate being advised as to the amount of your fee, which can be on a per diem or some any other basis as long as it is reasonably detailed. If agreeable to you, an exchange of letters on this feature will satisfy both this Department and the Bureau of Public Roads. Oregon must proceed as rapidly as possible with the Interstate 405 planning and construction and so far as our schedule is concerned, the sooner you can come to Portland, the better.

Sincerely yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms

cc Forrest Cooper
F. B. Klaboe
Victor D. Wolfe
T. W. Litchfield

JAMES WILSON DIFFENDERFER -- 115 EAST BENEDICT AVENUE -- HAVERTOWN, PENNSYLVANIA 19083

15 June 1966

Dear Mr. Porter:

I would almost suspect from your letter of June 10 that you had recently been in touch with our mutual friend, Leonard Lindas, who got me to come to Nevada to do some work for him last year.

I certainly enjoyed doing the other job for you in Portland in 1964. Since you were such a fine group of men with whom to work, I would be glad to make myself available again this year, for whatever assignment you may have, provided we can work out some mutually satisfactory dates which would enable me to serve you within my busy work schedule by using some of my vacation time to meet with you.

It is interesting that this job on I-405 is with the Union Pacific, the same as the one that I had with Leonard at Las Vegas.

Please let me know your desired schedule and what you want me to do and I'll do everything possible to work it into my schedule. Yes, I accept the assignment. Thank you.

Cordially,

James W. Diffenderfer

Mr. R. L. Porter
Deputy State Highway Engineer
State Highway Department
Salem, Oregon 97310

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OREGON
STATE HIGHWAY COMMISSION

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STATE HIGHWAY COMMISSION

RECEIVED
JUN 10 1966
FOR FILING

I-405-8(17)303
7276

June 10, 1966

AIRMAIL

Mr. James Diffenderfer
Special Services Department
The Pennsylvania Railroad Company
113 East Benedict Avenue
Havertown, Pennsylvania

Dear Mr. Diffenderfer:

The Oregon Highway Commission is now engaged in attempting to secure an easement across the yards of the Union Pacific Railroad Company in Portland, Oregon to accommodate Interstate Route 405. Problems have developed in connection with this proposed easement acquisition and it is desirable that this state retain the services of a railroad expert to advise us, to evaluate our proposed plan and, if necessary, to suggest changes and alterations. Would you be available for such an assignment?

The problem, while somewhat similar to the Portland Traction Company case on which you worked a year or two ago, is physically considerably simpler. No crossings needs to be adjusted or moved but several railroad buildings are involved.

We would appreciate being advised by return mail if you could accept such an assignment at this time.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:mm
cc Forrest Cooper
F. B. Klebes G. E. Rohde
Victor D. Wolfe D. H. Hoehring

I-405-8(17) PARSON, BRINCKERHOFF, QUADE 1967
303 & DOUGLAS - Consultants
#7276 Fremont Bridge Folder #4

CIA 3169
2657

Form FHWA 121 (Rev. 5-73) 7276

Contract

UNITED STATES GOVERNMENT

Memorandum

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

DATE: March 20, 1974

In reply refer to: 10-41-EC2

SUBJECT: Oregon Project I-405-8(1)301
Fremont Bridge Superstructure
Supplement to PBQ&D Consultant Agreement

FROM : G. L. Green, Division Engineer

TO : Mr. F. B. Klaboe, Administrator & State Highway Engineer
Salem, Oregon

The February 19 supplement to the Consultant Agreement with Parsons, Brinckerhoff, Quade & Douglas to allow additional compensation for additional costs occurred during the construction of the Fremont Bridge is formally approved. Payment of the $2,192.22 is hereby authorized.

NOTED
E. S. HUNTER

G. L. Green

3-26-74
Copy to Skoog
Julian
Hart

NOTED
A. E. JOHNSON

RECEIVED
STATE HWY ENGR
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RECEIVED
MAR 26 1974
OFFICE OF
ASSISTANT STATE HIGHWAY ENGINEER

#7276
Consult.

5

5d

February 21, 1974

2-19-74

AIR MAIL
Parsons, Brinckerhoff, Quade
and Douglas, Inc.
One Penn Plaza
250 West 34th Street
New York, New York 10001

MISC. CONTRACTS AND
AGREEMENTS No. 3169

Gentlemen:

Attached for your records is a fully executed copy of a supplemental agreement covering the Fremont Bridge Superstructure in Portland authorizing the payment of an overrun in the amount of $2,192.22.

We have retained a fully executed copy of this agreement for the Transportation Commission's files.

Very truly yours,

C. W. Head
COMMISSION SERVICES

fkm

Att.

cc Walt Hart
(agree. att.)

7276
Consult

5

February 15, 1974

TO Oregon Transportation Commission

FROM F. B. Klaboe
Administrator and
State Highway Engineer

SUBJECT Supplemental Consultant Agreement
Fremont Bridge Superstructure
Contract 7276

By Commission action of October 21, 1966 an agreement with the firm of Parsons, Brinckerhoff, Quade & Douglas was approved to do the preliminary and final design of the Fremont Bridge crossing of the Willamette River in Portland, Oregon. A first supplemental agreement dated November 8, 1967 provided for the design of a structure of increased width. All work under these agreements has been completed.

The fracture of the arch tie-girder connection at Panel Point 3 necessitated a redesign of the joint, and after a thorough analysis of the cause of the fracture, the responsibility of all the parties involved was established and the compensation due the consultant was determined. The redesign costs, plus added costs due to center span lift conferences, and the checking of unusually complex erection drawings, overran the limiting amount of the original and first supplemental agreement. This supplemental agreement authorizes payment for the overrun of $2,192.22.

This is a Federal-aid project and Federal Highway Administration approval has been received. I recommend approval of this supplemental agreement, which will be an item on the agenda of the February 19 Commission meeting.

bc: C. W. Head
George M. Baldwin
A. E. Johnson
E. S. [illegible]ter
V. E. [illegible]ecg
Region 1
W. J. Hart
Gary Sund
R. E. Whipps

RJW:ag cm

#7276

(Circuit)

UNITED STATES GOVERNMENT

Memorandum

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300, Salem OR 97308

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure
Supplement to PBQ&D Consultant Agreement
(Mr. Robert Wright's memo, 12-6-73)

DATE: December 14, 1973

In reply refer to: 10-35.EC2

FROM : G. L. Green, Division Engineer

TO : Mr. F. B. Klaboe, Administrator & State Highway Engineer

We have reviewed the supplement to the consultant agreement with Parsons, Brinckerhoff, Quade & Douglas - as submitted with Mr. Wright's memorandum - and find it satisfactory.

Please furnish three copies of the executed agreement for our formal action when they become available. We would also appreciate receiving a financial summary of this total consultant agreement showing the amounts authorized for the original agreement and each succeeding supplement, including this one. This information is needed for our consultant agreement report, form PR-28.

G. L. Green

NOTED
E. S. HUNTER
12-21-73
Hart
Als handle
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R. E. Johns

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RECEIVED
DEC 19 1973
OFFICE OF
ASSISTANT STATE HIGHWAY ENGINEER

12-21-73
original to Hart
to handle.

.7276
Consult

December 10, 1973

Mr. T. R. Kuesel
Senior Vice President
Parsons, Brinckerhoff, Quade
& Douglas, Inc.
One Penn Plaza
250 West 34th Street
New York, NY 10001

bc F. B. Klaboe (enc.)
E. S. Hunter "
H. S. Coulter "
Walt Hart
R. N. Bothman "

Dear Mr. Kuesel:

Fremont Bridge Superstructure
Contract No. 7276

Thank you for your November 29 letter indicating acceptance of the financial settlement for the additional items to our consulting agreement as proposed in my October 26 letter to you.

Your documentation of additional work required to check the contractor's unusual quantity of shop drawings and erection procedure is satisfactory. This extra work was required because of the contractor's decision to use nonconventional methods to install the main span.

All monies due you have been released except for $2,192.22, which is in excess of the limiting amount of our original agreement. This amount is part of the above extra work. A supplemental agreement covering this will be forwarded to you soon. Upon completion of processing this supplement, the remaining money due you will be released.

It has been an enriching experience working with you and your staff. Your professional attitude and cooperation with this division has been appreciated. Your organization will be kept in mind in the future when the services of a consultant are required.

Very truly yours,

WJH:dh ja

A. E. Johnson
Deputy State Highway Engineer

cc Glen L. Green
Federal Highway Administration

2045-A040

November 29, 1973

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

NOTED
A. E. JOHNSON

Re: Fremont Bridge
Stadium Freeway
Contract 7276

Dear Mr. Hart:

As requested in your letter of October 26, 1973, by Mr. A. E. Johnson, we are enclosing two (2) copies of our Invoice No. 23338 and the itemized breakdown substantiating the $13,167.21 bill for engineering services agreed to as extra work. This extra work involved the checking of the unusual and complex erection procedures undertaken by Murphy Pacific Corp. in the erection of the Fremont Bridge.

We trust that this requested documentation meets with your approval and will help expedite payment of these services.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis B Silano

L. G. Silano
Project Engineer

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DEC 1 1973
BRIDGE DIVISION

RECEIVED
STATE HWY ENGR
DEC 3 73
REFER TO
Hart
FOR

sn
enc.
cc: A. E. Johnson

NOTED
W. J. HART

PARSONS
BRINCKERHOFF
QUADE
DOUGLAS
INC.

Engineers

One Penn Plaza, 250 West 34th Street, New York, N.Y.10001 (212) 239-7900 Cable: Parklap, New York Telex WU12-5441 RCA 232 117

November 29, 1973

RECEIVED
STATE HWY ENGR
DEC 3'73
REFER TO
Jan Hart
FOR
Sec | Owners | RW | Dir | Chem | Act | File
2

NOTED
A. E. JOHNSON

Mr. A. E. Johnson
Deputy State Highway Engineer
Oregon State Highway Division
Highway Building
Salem, Oregon 97310

Re: FREMONT BRIDGE - Contract 7276

Dear Mr. Johnson:

This will acknowledge receipt of your letter of October 26, 1973, and enclosures, relating to our billing for engineering services. After careful consideration of all aspects of this matter, we are prepared to accept the financial settlements proposed in your letter of October 26th. In so doing, we are responding to the penultimate paragraph of your letter, in which you indicate that your proposed settlement represents your best judgment of an equitable and justifiable resolution of what has been a difficult matter for all concerned.

At the same time, and as a matter of record, we wish to assert that we do not concur in some of the evaluations and conclusions contained in the "responsibility analyses" and "responsibility matrix" enclosed with your letter of October 26th. We continue to deny all liability or responsibility for the girder fracture at Panel Point #3, as set forth in our letter of May 16th.

However, in the present circumstances we do not believe that either our interests or those of the Oregon State Highway Division would be advanced by further discussion or disputation on the matter, and we therefore agree to accept the settlement set forth in your letter of October 26th as a practical resolution of our outstanding differences.

NOTED
R. W. ELLISON

RECEIVED
DEC 4 1973
BRIDGE DIVISION

NOTED
W. J. HART

Concerning the services for checking erection drawings, we have prepared the documentation you requested in support of an additional billing of $10,242.21. This is being transmitted under separate cover.

We also understand that a supplemental agreement will be needed to cover a small over-run in total billings above your presently authorized ceiling amount, and are prepared to process this upon receipt from you.

Despite our different viewpoints with respect to some aspects of the difficulties relating to the fracture at Panel Point #3, we appreciate the confidence you have shown in our professional services on the Fremont Bridge project, and your efforts to minimize the potential consequences of the fracture in a manner that could secure agreement by all parties concerned. We hope we may have the opportunity to serve the Highway Division on future projects, and that they may be professionally as challenging as the Fremont Bridge, but administratively more serene.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

T. R. Kuesel
Sr. Vice President

TRK:lb

RECEIVED
DEC 4 1973
BRIDGE DIVISION

#7270
Contract

ESH 5

OREGON STATE HIGHWAY DIVISION

HIGHWAY BUILDING • SALEM, OREGON • 97310

November 8, 1973

TOM McCALL
GOVERNOR

F. B. Klaboe
Administrator of Highways

Mr. L. G. Silano
Parsons, Brinckerhoff, Quade & Douglas
111 John Street
New York, NY 10038

NOTED
E. S. HUNTER

Dear Mr. Silano:

Fremont Bridge
Opening to Traffic

As I indicated during our telephone conversation today, the Fremont Bridge is scheduled to be opened to traffic on Thursday, November 15, at 1:30 p.m.

It is planned to have members of the official party ride across the bridge in antique cars. Enroute across the bridge they will break a banner announcing the opening of the bridge. An honored guest will be Mr. Frank Branch Riley, an individual who has done much to advance the cause of good roads in the state. He is now 98 years of age. He will ride across the bridge in the lead car with the Chairman of the Transportation Commission. At the end of the bridge the cars will be stopped and Mr. Riley will be presented a plaque commemorating the opening. This will complete the ceremonies.

Prior to the trip across the bridge, it is planned to have members of the official party meet at the River Queen Restaurant, 1300 N. W. Front Avenue, at the foot of the west end of the bridge, at 11:45 a.m. for lunch. From there the party will be transported to the ceremonies and returned to the parking lot of the restaurant where cars may be parked.

We are happy that your party has decided to attend, however, as I indicated, the Oregon Highway Division does not feel it can reimburse you for expenses incurred on the trip.

I understand that Messrs. Alfred Hedefine, Tom Kuesel, John Everson and you will attend the luncheon and be in the official part. As you requested I have made reservations for your party at the Benson Hotel in Portland for the nights of November 14 and 15.

Attached are some articles relative to the bridge and the "peoples day" which will be on October 11, the Sunday before the opening. No cars will be allowed on the structure during "peoples day".

We are pleased that you plan to attend and are looking forward to meeting with you again.

Very truly yours,

Walter J. Hart
Bridge Engineer
By ORIGINAL SIGNED
R.W. ELLISON
R. W. Ellison
Bridge Administration Engineer

RWE:dh
Attachments

cc A. E. Johnson
E. S. Hunter
R. N. Bothman
R. O. Cunningham
John Earley

RECEIVED
STATE HWY ENGR
NOV 9 73
REFER TO
FOR
Info Invas R/D D/R Sign Act File

#7276
Contract

October 26, 1973

Parsons, Brinckerhoff, Quade & Douglas
111 John St.
New York, NY 10038

Attention: Mr. Alfred Hedefine

Gentlemen:

Billings for Engineering Services
Fremont Bridge Superstructure
Contract No. 7276

Your letter of October 18 requested information about the status of payments to you under our agreements for engineering services for the subject project. The matter of extra work required for the redesign of Panel Point 3 has been the subject of several months' study and analysis by both the State and the Federal Highway Administration and has only recently been agreed upon. The findings on the redesign work as well as the lift conferences and the checking of erection drawings are outlined below.

Under the terms of the agreements you were to submit design calculations for the project, and as stated in our October 17 letter to you, we have received the calculations for the superstructure but not the substructure. Your obligations under the agreements will be considered complete as soon as we receive the substructure calculations and the retainage will be released at that time. The remaining 1/2% design fee will be processed immediately.

Final payment of all items will overrun the ceiling amount of the agreements by approximately $2,200 and reimbursement of this amount must await Transportation Commission approval of a supplemental agreement. This supplement will be forwarded to you for signature as soon at the necessary approvals are received.

Your costs for engineering services considered to be extra work in conjunction with the redesign of Panel Point 3, and for expenses involved in the job site conferences during the center span lift and in checking the contractor's erection procedures are summarized (as shown on your invoices) as follows:

Redesign of Panel Point 3 (Invoices shown below)*	$ 74,285.06
Center Span Lift Conferences (Invoice 21730)	12,251.50
Checking Erection Drawings (No Invoices)	13,168.96
TOTAL	$ 99,705.52

The FHWA has concurred with the State that the compensation summarized below is equitable to all. A detailed explanation of each item follows the summary.

Redesign of Panel Point 3	$ 41,569.95
Center Span Lift Conferences	10,703.58
Checking Erection Drawings	10,244.00
TOTAL	$ 62,517.53

Redesign of Panel Point 3

During the course of negotiations with the contractor regarding repair of Panel Point 3, a responsibility matrix was necessary to delineate the responsibility assessed to each party for the girder fracture. I have attached the original analysis that was used in conjunction with the Price Agreement as well as supplemental analyses which present the State's position as approved by the FHWA.

The revised totals at the bottom of the responsibility matrix show that the responsibility assessed to Earl and Wright and to Murphy Pacific have been reduced to zero. The supplemental

*Invoices Nos. 20390, 20526, 20576, 20689, 20726, 20806, 20943, 21008, 21164, 21722

analysis of August 24, 1972 gives the reasons for the reduction of Earl and Wright's responsibility and states that Murphy Pacific's responsibility might be reduced. We have reached the conclusion that Murphy Pacific's responsibility is negligible since the MEI studies indicate that only one junction piece had a heat affected zone and the 3.7% assessed responsibility to Murphy Pacific assumed that all four junction pieces were involved. When the State decided to change the design of all four pieces the responsibility of the contractor became a moot question.

Using the percentages shown on the revised total of the responsibility matrix, your firm has been assessed 44.04% of the responsibility and the other parties involved, 55.96%. You are to be compensated for those redesign costs not assignable to your firm, that is, 55.96% of $74,285.06 or $41,569.95.

Job Site Conferences for Center Span Lift

The presence of Mr. Silano and Mr. Abrahams was requested for the prelift conference held in Portland on February 15 and 16, 1973. Because of the complexity of the operation, it was essential that you had a knowledgeable staff on the site in the event a flaw developed in the lifting operation. It was appropriate, therefore, that Messrs. Silano, Hedefine, Fiori and Abrahams attend. However, we believe that the presence of Mr. Kuesel was not justified at the State's expense. Invoice No. 21730 has therefore been changed to delete Mr. Kuesel's expenses for the erection consultation. The revised total you are due is $10,703.58.

Checking Erection Drawings

It is agreed that the contractor's erection procedures were unusual and complex and thus required more than the normal review and checking by your firm. The one-half percent of work remaining on June 11, 1971, applied to the total amount of the consulting agreements results in $2,925 worth of work remaining under the agreement on that date. This amount deducted from $13,169 as work done since June 11, 1971, leaves an amount of $10,244 which represents the actual extra work involved. The one-half percent remaining under the contract should cover all other work since June 11, 1971, and any miscellaneous work yet to be done.

Before payment can be made on the $10,244, more documentation will be necessary to substantiate the $13,169 claimed. Please send an itemized breakdown at your earliest convenience.

I appreciate the services provided by your firm throughout the life of the project, and in particular after the fracture at Panel Point 3.

I am sure that some of your staff did devote personal time well beyond that which was included in your billings. However, I know you understand that as a public agency, we must justify and document as carefully as we are able each item of the additional expense, and I feel that our analysis and assignment of responsibility together with the ensuing money amounts represent our best judgment of an equitable justifiable settlement.

The invoices you have already submitted for the redesign of Panel Point 3 and the job site conferences for the center span lift are sufficient, and payment of $52,273.53 will be made to you as soon as the billing is processed by the Finance Section. Payment for the extra costs involved in checking the erection drawings will be made as soon as we receive the required invoices.

Very truly yours,

A. E. Johnson
Deputy State Highway Engineer

Att.

cc: F. B. Klaboe
E. S. Hunter
V. E. Skoog
L. H. Young
R. N. Bothman
R. Cunningham

RJW/ag dpy

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 232 117

ENGINEERS

October 16,1973

Mr. A. E. Johnson
Assistant Highway Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge.

Dear Mr. Johnson:

With the end of our firm's fiscal year approaching, I owe my partners a report on our financial status with respect to the Fremont Bridge Project. We have had no response to my letter of May 16th, in which we set forth an extensive discussion in support of our then unpaid invoices for engineering services, in the amount of $74,285.06. I should appreciate it if you could advise me of the present status of this matter.

In addition to the invoices covered in my letter of May 16th, we also have outstanding an invoice in the amount of $12,251.50, covering pre-erection and erection consultation.

Recently we submitted the complete design calculations which we believe was the last item due in our contract, and on October 12th we submitted a final invoice in the amount of $35,400.00, covering the remaining 1/2% of the design fee, plus the amount being held by the Department as retainage. This brings the total amount outstanding to $121,936.56.

As you will recall from our discussions in your office on April 11th, a substantial part of the amounts discussed in my letter of May 16th is related towork directed by the Department in connection with design and checking of the revised details at Panel Point 3,which were adopted by the Department after its decision to replace all four girder sections at Panel Point 3. We understood that this item was non-controversial, and that our invoices for services in this connection,(in the amount of approximately $36,000), might be cleared relatively quickly. We understand, of course, that the clearing of the invoices connected with the investigation of the brittle fracture involved other parties, and may therefore take longer to accomplish.

The remaining invoices covering erection consultation and release of retainage also appear to be non-controversial, and we hope might be processed promptly.

NOTED
R. J. WRIGHT

NOTED
W. ELLISON

Since we incurred the costs for these services during the period from June 1971 through April 1973, and have received no reimbursement to date, we have been constrained to cover our expenditures by borrowing funds in anticipation of future collections. The interest on these borrowings has steadily eroded any margin that might accrue from our final collections, and under present financial conditions, the erosion resulting from current interest rates is accelerating.

We should greatly appreciate anything you might do to expedite this matter.

We are highly pleased at the continued reports of satisfactory progress in the final completion of the project, and join you in anticipation of its opening to the public next month. As in all great projects, this one has had its moments of travail, but they shall all fade when the project is successfully in service and receives the acclaim that it is due.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

T. R. Kuesel
Sr. Vice President

TRK/Y

RECEIVED
OCT 19 1973
BRIDGE DIVISION

RECEIVED
STATE HWY ENGR
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REFER TO
Bob Ellison
FOR

FORM E-80 #7276 Contract

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

DATE October 23, 1973

TO Mr. Richard J. Hacek
Finance Section

FROM Robert J. Wright
Bridge Office Engineer

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NOTED
A. E. JOHNSON

SUBJECT Parsons, Brinckerhoff, Quade & Douglas Billings
Fremont Bridge Superstructure
Contract 7276

Attached in file folders are invoices from Parsons, Brinckerhoff, Quade & Douglas for engineering services on the subject project. Also attached are Federal Highway Administration approval letters and our rough draft letter to the consultant approving certain amounts of some invoices. The invoices are itemized separately and attached for signing by the Bridge Engineer.

Below is an explanation of each item; please refer to our rough draft letter to Parsons, Brinckerhoff, Quade & Douglas dated October 19, 1973 for a further explanation.

1. Usual Engineering Services: (Invoice No. 23222)

   This invoice shows the completion of the usual engineering services. The increase equals 1/2% x $585,000 = $2,925. The invoice includes all outstanding retainage for a total of $35,400. Please pay $2,925 (minus its retainage) and continue to withhold all retainage until notified of the receipt of the outstanding items.

2. Job Site Conferences for Center Span Lift: (Invoice No. 21730)

   This invoice totals $12,251.50. Please pay only $10,703.58, the approved amount.

3. Redesign of Panel Point 3: (Invoices Nos. 20390, 20526, 20576, 20689, 20726, 20806, 20943, 21008, 21164, 21722)

These invoices total $74,285.06. 55.96% of this amount has been approved which is $41,569.95. Please pay this amount.

4. Checking Erection Drawings: (No invoices yet)

Although the approved amount is $10,234, no payment should be made until invoices are received.

Total payment to the consultant at this time is authorized in the amount of $55,198.53. Payment for the checking of erection drawings considered to be more than the normal review and release of the retainage await further documentation from the consultant.

According to my calculations, all payments will overrun the ceiling amount of the agreement by $1,194.01. Please confirm this figure or revise it so that a supplemental agreement can be initiated.

RJW/ag

Attachs.

cc A. E. Johnson
E. S. Hunter

SUMMARY OF BILLS RECEIVED FROM PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

RELATING TO ENGINEERING SERVICES ON FREMONT BRIDGE SUPERSTRUCTURE, CONTRACT 7276

October 23, 1973

Description of Work	Invoice No.	Invoice Amount	Approved Amount
Usual Engineering Services	23222	$ 35,400.00	$ 2,925.00
Job Site Conferences	21730	12,251.50	10,703.58
Redesign of Panel Point 3	20390	4,668.11	
	20526	10,185.04	
	20576	5,766.51	
	20689	5,208.97	
	20726	6,229.78	
	20806	6,722.80	
	20943	23,971.55	
	21008	3,229.17	
	21164	7,160.81	
	21722	1,142.32	
		$ 74,285.06	$ 41,569.95
Checking Erection Drawings	-	13,169.00	-
GRAND TOTAL		$135,105.56	$ 55,198.53

Approved as of October 23, 1973 for $55,198.53.

APPROVED

BRIDGE ENGINEER

Form FHWA 121 (Rev. 5-73)

#7276 Consult.

UNITED STATES GOVERNMENT

Memorandum

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

DATE: October 17, 1973

In reply refer to: 10-35-EC2

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure
Consultant's Extra Compensation for Checking Erection Drawings

FROM : G. L. Green, Division Engineer

TO : Mr. F. B. Klaboe, Administrator & State Highway Engineer
Salem, Oregon

As requested in Mr. Hart's September 12 letter we concur that the Consultant Parsons, Brinckerhoff, Quade & Douglas, Inc. is entitled to an additional $10,244 for the extra work needed to check erection drawings. However, we are unable to determine how this relates to the original fee. It appears that on September 15, 1966, we approved a consultant agreement that provided a lump sum allowance of $585,000 for the design of the Fremont Bridge. There was also an $65,000 allowed for extra work and/or construction consultation, making the maximum payment at $650,000. On August 28, 1967, we approved a supplement to the Consultant Agreement which increased the design width of the roadway to 68 feet from 59 feet and increased the lump sum fee to $649,500 with a new maximum for the agreement at $714,000 or still retaining a $64,500 allowance for extra work and/or construction consultation. Is the $10,244 to be taken from that allowance or is it in addition to that allowance. If it is from that allowance we assume that payment can be made without further modification of the agreement.

G. L. Green

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cy Hunt
10-19-73

#7276
Consult.

A. E. Johnson

NOTED
A. E. JOHNSON

October 17, 1973

Mr. Louis Silano
Parsons, Brinckerhoff, Quade & Douglas
111 John St.
New York, NY 10038

Dear Mr. Silano:

Design Calculations
Fremont Bridge

As stated in your letter of October 5, 1973, we have received the design calculations, Volume 1 through 10.

These calculations do not include the design of substructure Pier 2W or 2E, Pier 1W and Pier 1E. Please send these calculations to complete the design calculations of the bridge.

Very truly yours,

Walter J. Hart
Bridge Engineer
By ORIGINAL SIGNED
R.W. ELLISON
R. W. Ellison
Bridge Administration Engineer

KAK/ag

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7776 - Fremont

2045-A040

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 232 117

ENGINEERS

October 3, 1973

Mr. Walter J. Hart, Bridge Engineer
Oregon State Highway Division
Highway Building
Salem, Oregon 97310

NOTED
A. E. JOHNSON

Re: Fremont Bridge
Strain Gage Readings

Dear Mr. Hart:

We have reviewed the strain gage data sent to us in your letters of June 6 and August 7, 1973. This letter will summarize our comments with regards to this data.

One set of the readings are for the scratch gages installed in the vicinity of Panel Point 14. These readings are a set of strains which occurred during the erection of the center span. Unfortunately, these readings have not been related to the various erection cases which have been analyzed by computer and shown on Murphy Pacific Drawing 69500-ST1, "Stress Sheet One." Therefore, we can attach no significance to these readings and make no further comment on them.

A second set of readings is for the strain gages installed in the vicinity of Panel Point 3. Since we do not know when these gages were installed, we have only tried to compare the difference of the first set of readings "Without Center Span, 3-14-73" to later sets of readings. Also, we have considered the following sets of readings to be equivalent to the following erection cases shown on Murphy Pacific Drawing 69500-ST1, "Stress Sheet One."

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OCT 5 '73
REFER TO
FOR

Strain Gage Readings	Stress Sheet One
Without Center Span 3-14-73	Case 1
Center Span Lifted 3-15-73, 1:15 A.M.	Case 2
Before Deck Tensioning on West Side 5-11-73, 10:30 A.M.	Case 3
5-31-73, 9:40 A.M.	Case 4

The remainder of the strain gage data does not appear to be related to any particular stage of construction and thus has not been examined.

With the exception of the Case 3 readings for gages #3 and #4, the measured stresses for gages #1 through #4 are within 17% of the calculated stresses for Cases 1 to 2, Cases 1 to 3 and Cases 1 to 4. The measured readings of Cases 1 to 3 for gages #3 and #4 were lower than the calculated values by 32% and 28%, respectively.

For gages #5 and #6, the measured strains appear to be below the accuracy of the gages. Thus the measured stresses for these gages cannot be reasonably correlated to the calculated stresses for Cases 1 through 4.

Finally, for gages #7 and #8 there are large differences when the measured stresses are compared to the calculated stresses for Cases 1 through 4. Perhaps the gages were kicked at some time after Case 1 but prior to Case 2.

In our judgement, after reviewing and analyzing this data, the results are inconclusive and it would be difficult to make any definite conclusions on the behaviour of the structure. Should you have any questions, please feel free to contact us.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

L.G. Silano
Project Engineer

LGS:mc
cc: A.E. Johnson, OSHD

#7276
Consult

2045-A040

5

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 232 117

ENGINEERS

September 14, 1973

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

NOTED
A. E. JOHNSON

Re: Fremont Bridge
Rope Separators

Dear Sir:

Per our telephone discussion of September 12, 1973, we are enclosing herewith one (1) print of a drawing involving details of wire rope separators. We originally developed these details so that they could be fabricated by maintenance personnel on another project, when it became apparent that excessive vibrations were developing on a particular suspender during periods of high wind.

Certain modifications will have to be made to accommodate them for use on the Fremont Bridge, should it be necessary. As you are aware, all suspender ropes will vibrate to varying degrees under wind loads. It is only when the amplitudes of vibration become excessively large or when the ropes slap against one another that it becomes necessary to change the natural frequency of the ropes to avoid damage to the wires.

Please feel free to use these details as you see fit and if we can be of further assistance, please advise.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L.G. Silano
Project Engineer

LGS:mc
cc: A.E. Johnson

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FOR

#7276
Consult.

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PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
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ENGINEERS

September 14, 1973

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STATE HWY ENGR
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REFER TO
FOR

NOTED
A. E. Johnson

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Lifting Lugs

Dear Sir:

This letter is in response to several telephone conversations which transpired over the past few days, with regard to the cracks in the transverse fillet welds where the lifting lugs are welded to the deck plate. Undoubtedly you are aware that in December 1969 these lifting lugs and their details were introduced by Earl and Wright, Consultants for the Contractor, for the convenience of the Contractor in handling and erecting the deck sections. Over a period of two years in correspondence with the Contractor concerning this detail, we have insisted, at the State's request, that full continuity to the deck plate be established after removal of the lugs. To accomplish this, the Contractor was informed on July 20, 1970, to provide full penetration butt welds of the deck plate to the lifting lugs.

On October 5, 1971, after learning that the Contractor was preparing to remove the lifting lugs on the then erected West Approach Side Span, we wrote requesting him to submit his "proposed procedure for removal of the lifting lugs and repair of the orthotropic deck in a manner that will preserve the integrity of the deck."

On December 6, 1971, with the concurrence of Mr. I. Merchant, approval was extended to the procedures outlined on SK-100 with the requirement that the fillet size be increased to 3/8 inch. In our judgment it was advisable to live with the already installed fillet welds rather than insist on full penetration welds which

at this late date would have had to be accomplished in the field under adverse conditions.

Insofar as the cracks in the 1½ inch long transverse fillet welds are concerned, it would be desirable to grind out these cracks by removing the welds. No attempt should be made to replace or repair these welds since the net section through the slots is not the critical section. When removing the transverse welds care should be taken to smoothly transition the termination of the longitudinal welds at their junction. This is the minimum effort that should be taken to correct this condition and it should be accomplished at all the lifting lugs.

Concerning the longitudinal welds, since these are essential to the integrity of the top flange of the floorbeam they should not be cut out to free the lifting lug. Since your inspection has revealed that these are acceptable sound welds, they should be left alone or repaired if any defects are uncovered.

The defects uncovered in the transverse welds are associated with and confined to the welds only. They do not permeate into the parent metal of the deck plate and therefore the removal of these welds is necessary to prevent any likelihood of this occurrence. On the other hand, we view the slots in the deck plate which permit entry of the lifting lugs as not detrimental, since the deck plate is a thin plate manufactured from cross rolled plates with a high degree of notch toughness.

We understand and appreciate the concern over these slots and your desire to eliminate the reentrant corners. This could, as we have indicated, be accomplished by either of two ways, as follows:

1. A thick template with prebored holes sized to match the slot width and spaced to effect rounded ends to the slots. The template would be hollowed out to avoid interference with the stub of the lifting lug thus permitting the template to rest on the deck plate. The template should be thick enough to control and guide the drill bit during the drilling operation.

2. By drilling holes in the deck plate in advance of the slot terminations and saw cutting back to the slot terminations. These holes should be sized to match the slot width. Some grinding of the saw cut edges may be necessary to eliminate any notches.

These lifting lugs and their related details were initiated by the Contractor for his convenience and were not part of the Contract Plans and Specifications, hence we view this remedial work as being the Contractor's responsibility and an obligation on his part to restore the integrity of the deck plate. If we can be of further assistance, please advise.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano

L.G. Silano
Project Engineer

LGS:tmc

cc: A.E. Johnson

7276 Contract

OREGON STATE HIGHWAY DIVISION

HIGHWAY BUILDING • SALEM, OREGON • 97310

September 12, 1973

TOM McCALL
GOVERNOR

F. B. Klaboe
Administrator of Highways

NOTED
E. S. HUNTER

Mr. Glen L. Green
Division Engineer
Federal Highway Administration

ORIGINAL SIGNED
WALTER J. HART

Walter J. Hart
Bridge Engineer

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SEP 13 1973
OFFICE OF
ASSISTANT STATE HIGHWAY ENG...

Fremont Bridge Superstructure
Contract 7276
Consultant's Extra Compensation
Checking Erection Drawings

As suggested in your letter of August 3, 1973, State and Federal Highway Administration personnel have jointly reviewed the consultant's request for extra compensation as reimbursement for checking the unusually large quantity of erection calculations and drawings for the subject project. The contractor's erection procedures were unusual and complex and thus required more than the normal review and checking by the consultant.

The consultant states that on June 11, 1971 his work was 99.5% completed. The attached copy of the consultant's weekly progress report of that date indicates the same degree of completion. The remaining one-half of one percent was for completing the checking of shop and erection drawings.

The attached Pittsburgh Testing Laboratory reports indicate that by approximately June 11, 1971, in the aggregate, the various fabrication shops had templates made for 100% of the steel, had laid out and punched 95% of the steel, and had welded 88% of the steel. To be this far along with fabrication, the checking and approval of shop drawings had to be essentially completed. Thus the one-half percent was essentially for completion of checking of erection drawings.

The consultant now claims that since June 11, 1971 he has spent an additional 100 man days checking drawings and that this is a measure of the additional checking work involved because of the complex erection system. Using the appropriate salary multipliers, the claimed extra work amounts to $13,168.96.

The one-half percent of work remaining on June 11, 1971 applied to the total amount of the consulting agreement results in $2,925 worth of work remaining under the agreement on that date. This amount deducted from the $13,169 claimed as work since June 11, 1971, leaves an amount of $10,244 which represents the actual extra work involved. The one-half percent remaining under the contract should cover all other work since June 11, 1971 and any miscellaneous work yet to be done.

We request your concurrence in the payment of $10,244 in settlement of the consultant's claim for the extra work involved in checking erection drawings and calculations for the contractor's complex method of erection.

RWE:dh
Attachment

cc A. E. Johnson
E. S. Hunter
V. E. Skoog
L. H. Young

#1276
Consult.

2045-A040

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 232 117

ENGINEERS

August 21, 1973

RECEIVED
STATE HWY ENGR
AUG 23 73
REFER TO
FOR

RECEIVED
SEP 5 1973
Office of
Assistant State Highway Engineer

NOTED
NOTED
E. S. HUNTER

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Dear Sir:

Re: Fremont Bridge

In answer to your telephone inquiry concerning the removal of the lifting lugs for the orthotropic deck units which is shown on Murphy Pacific's drawing SK-100; please be advised that we would agree to their removal without increasing the size of the fillet weld. We would, however, expect that the flame cut edges of the remaining 1/2" stub-out be ground off with all corners rounded.

The 3/8" fillet welds were determined in order to restore full capacity to the deck plate which was the desire of Mr. Ivan Merchant when this lug detail was proposed by the contractor. In our judgement, this was not considered essential for the following reasons:

1. For the localized floor system, the design for the critical rib is not at this location, hence the loss in section would not affect the design.

2. For the floorbeam design, these lugs are located at the point of contraflexure and hence are not critical to their design.

3. In the overall structure, the net section is controlled at the splice location and hence the loss in section at the lifting lugs is minimal and will not control.

We maintain that the existing 5/16" fillet welds are adequate and concur in your decision not to attempt to increase their size the additional 1/16" required for full capacity.

Your question pertaining to repair procedures involving the deck plates is one that would be better handled when a problem develops where repairs are necessary. At that time a solution would be developed which would be the most suitable for the particular problem.

In answer to your question pertaining to the note in Section H'-H' on Sheet No. 7 (Stringer Connections - Deck Joint C), the undersized holes in the stringer web should be reamed and bolted after all deck concrete is in place. The 7/8" turned bolts in the seat bracket should be snugged but not torqued.

We were pleased to hear of the great progress currently being made with the placement of the deck concrete, and we would appreciate receiving any recent progress photos which might be available.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano

L. G. Silano
Project Engineer

LGS/ss

cc: R. O. Cunningham
A. E. Johnson

7276

Form FHWA 121 (Rev. 5-72)

Consult

5

UNITED STATES GOVERNMENT

Memorandum

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

DATE: August 3, 1973

In reply refer to: 10-35.7

+ 7276 Consult.

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure
Consultant PBQ&D's Final Billing

FROM : G. L. Green, Division Engineer

TO : Mr. F. B. Klaboe, Administrator & State Highway Engineer
Salem, Oregon

NOTED
L. L. JOHNSON

Mr. Hunter's memorandum of June 19 requested Federal-aid participation in several additional items submitted by the consultant, PBQ&D, that were felt to be above the normal limits of the consultant agreement. Our comments on the three items in question are as follows:

Item 1 - Redesign of Panel Point 3. Your proposal to reduce the fees for design work according to the matrix developed in connection with P. A. #14 appears to be a logical settlement of this item. The consultant's billing for this item was $74,285.06 which when adjusted for the matrix responsibility as set forth in your June 19, 1973 memorandum allows a payment of $41,569.95. We approve of Federal participation in this amount.

Item 2 - Job site conferences in connection with the center span lift. The consultant sent representatives to a prelift conference in February 1973 at your request. Also, it was desirable and appropriate that they sent representatives for the actual lift. The consultant has submitted a bill for $12,251.50. You recommend payment of $10,703.58 and we approve payment of this amount.

Item 3 - Unanticipated design review required due to the contractor's erection procedures. The consultant has billed you for $13,168.96 for this item. We agree that the contractor's erection procedures were unusual and complex and therefore required more than the normal review and checking by the consultant.

(more)

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AUG 7 '73
REFER TO
Hunter
FOR
Info | Invest | PID | DIR | Sign | Dist | File

We recommend that the State and the Federal Highway Administration make a combined detailed review of the work involved and agree on the payment for the work involved.

Please contact Mr. Schell when you intend to make this review.

G. L. Green

7276
Consult.

2045-A040

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 232 117

ENGINEERS

7276
Consult.

July 30, 1973

RECEIVED
STATE HWY ENGR
AUG 1 73
REFER TO
FOR

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Paving Sequence

Gentlemen:

This letter acknowledges our telephone conversations of the past few days concerning the paving of the orthotropic upper deck of the Fremont Bridge.

We can understand your desire to pave the upper deck during the month of August when the favorable weather is conducive to a better job, but this would involve placing the upper deck wearing course prior to placing the lower deck concrete. The contract plans and specifications require the lower deck concrete to be completed prior to commencing the paving of the orthotropic upper deck. Placing the epoxy asphalt after all concreting of the lower deck is complete permits the adjustment of the upper deck profile to the structures as-built condition. While reversing the order of this sequence would affect the stability of some elements in the structure, we believe that measures could be taken to maintain the integrity of the bridge. However, the revised order of placement does have a serious drawback in that it would subject the epoxy asphalt wearing course to a tensile stress of 2,000 p.s.i. due to the lower deck concrete dead load. Since the tensile strength of the wearing course is limited to 500 p.s.i., it would clearly be damaging.

As discussed with you, we did talk to Bill Connolly of Adhesive Engineering for his view on this subject. He reports that his technical people have never placed epoxy asphalt on any of their previous jobs under conditions where it would be

NOTED
A. E. JOHNSON

subjected to permanent tensile stresses after placement. Further he stated that if he were required to place the upper deck under your proposed revised sequence, he would not accept the responsibility for the consequences.

Mr. Connolly expressed concern over the fact that concresive epoxy asphalt is a thermal setting material and requires time to cure. If the upper deck were placed prior to the lower deck, he would not want concrete trucks - or for that matter any heavy construction equipment, using the newly paved upper roadway as an access roadway for placing the lower deck concrete. He was also concerned about spillages, etc. from these trucks during their operations if they were to use the roadway in this manner. More importantly, Mr. Connolly informs me that he is obligated to be in Portland to prepare for the paving operation the week after Labor Day. His contractual obligations elsewhere will not permit him to be there sooner. Finally, he did not express too much concern for the weather problem as he will only require four or five days to complete the paving. He did mention that cooler weather would require more time for curing and obviously wet weather would interfere with paving.

Please inform us of your decision on this matter. If we can be of any further assistance, please do not hesitate to contact us.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L.G. Silano
Project Engineer

LGS:mc

cc: A.E. Johnson
R.O. Cunningham

7276
Contract

2045-X102

5

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 232 117

ENGINEERS

June 29, 1973

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Contract 7276
Structural Steel Corrective Work

Dear Mr. Hart:

This is to acknowledge receipt of a copy of your letter, dated June 19, 1973, to Mr. Glen L. Green of the Federal Highway Administration, wherein you reported on the status of the remedial work.

We have reviewed the items discussed in the letter and are in accord with your conclusions. We would, however, like to emphasize two points; namely, that in Item 3, the work of removing the top flange slugs should be accomplished before the deck slabs are poured. Secondly, under Item 6, the single 1/2 inch web to flange fillet welds are adequate to transmit the shear as you indicated.

If we can be of further assistance, please advise.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L.G. Silano
Project Engineer

LGS:mc

RECEIVED
JUL 2 1973
Office of
Assistant State Highway Engineer

RECEIVED
JUL - 2 1973
BRIDGE DIVISION
NOTED
W. J. HART

7276
Contract

E. S. Hunter

OREGON STATE HIGHWAY DIVISION

HIGHWAY BUILDING • SALEM, OREGON • 97310

TOM McCALL
GOVERNOR

GEORGE M. BALDWIN
Administrator of Highways

June 19, 1973

TO Mr. Glen L. Green
Division Engineer
Federal Highway Administration
477 Cottage St., N. E.
Salem, OR. 97308

RECEIVED
JUN 20 1973
OFFICE OF
ASSISTANT STATE HIGHWAY ENGINEER

FROM Walter J. Hart
Bridge Engineer

SUBJECT Parsons, Brinckerhoff, Quade & Douglas
Billing for Engineering Services
Fremont Bridge, Contract 7276

Parsons, Brinckerhoff, Quade and Douglas has requested additional payment for engineering services under the Fremont Design contract for:

1. Redesign of Panel Point 3.
2. Job site conferences on the center span lift.
3. Unanticipated design review required due to the contractor's erection procedures.

Parsons, Brinckerhoff, Quade and Douglas has presented billings for items 1 and 2 in the amount of $74,285.06 and $12,251.50 for a total of $86,536.56. We recommend a payment of $41,569.95 in settlement of Item 1, and $10,703.58 for Item 2, a total of $52,273.53.

In the analysis of the Panel Point 3 girder fracture under Price Agreement 14, 92.96% of the responsibility was assessed to the owner (State, F.HW.A. and the design consultant.). 40.94% of the total responsibility was assessed to Parsons, Brinckerhoff, Quade and Douglas. I would propose that the design consultant should bear that portion of the Panel Point 3 redesign costs. The remaining share (100.00 - 44.04 = 55.96%) is the responsibility of the State and F.H.W.A. The consultant should be compensated for this portion of the total Panel Point 3 redesign cost as (55.96%) ($74,285.12) = $41,569.95. This is the adjusted amount due Parsons, Brinckerhoff, Quade and Douglas for redesign of Panel Point 3.

NOTED
E. S. HUNTER

E S. Hunter

The presence of Mr. Silano and Mr. Abrahams was requested for the prelift conference held in Portland on February 15 and 16. Due to the complexity of that operation, it was appropriate that Mr. Hedefine, as a principal partner (retired) of the firm should attend. We recommend payment of these bills.

In Mr. Silano's letter of April 20, 1973, he cited extensive on-site consultation services provided during the week of the center span lift. I believe that he considerably overstated his case in this area. To the best of my knowledge and that of Mr. Cunningham, the representatives of Parsons, Brinckerhoff, Quade & Douglas were asked for, and offered a minimum of advice during the lift. Significant consultation was not necessary since the lift proceeded with a minimum of difficulty. This is not to infer that their presence was not justified. Because of the complexity of the operation it was essential that they have knowledgeable staff on the site in the event that a flaw developed in the lifting operation. The expenses incurred by Mr. Silano, Hedafine, Fiori and Abrahams are justified and should be paid. We believe that neither Mr. Kuesel, past nor present position with the firm justifies his presence at the State's expense.

We have some reservations relative to Parsons, Brinckerhoff, Quade and Douglas's claim for additional payment for unanticipated design changes due to the contractor's erection scheme. The statement that 99.5 percent of Parsons, Brinckerhoff, Quade and Douglas's work in this area was completed by June 11, 1971 is unrealistic considering the actual progress of the work. We would appreciate your comments on this specific area of billing.

Copies of Parsons, Brinckerhoff, Quade and Douglas's billing and related correspondence is attached for your review. We request your concurrence in the payment of $52,273.93 in settlement of Item 1 and 2. We would like an expression of your opinion on the bills for unanticipated design charges before we contact Parsons, Brinckerhoff, Quade and Douglas further on this item.

WJH:lp
cc: A. E. Johnson
E. S. Hunter
V. E. Skoog
L. H. Young

Encl.

7276

FORM S-30 Contract

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

DATE June 15, 1973

TO Mr. Robert Cunningham
Resident Bridge Engineer

FROM Walter J. Hart
Bridge Engineer Walter J. Hart

SUBJECT Field Welds at Parapet Joints
Fremont Bridge
Contract 7276

RECEIVED
JUN 18 1973
OFFICE OF
ASSISTANT STATE HIGHWAY ENGINEER

Attached is a copy of a letter from Mr. L. Silano on the subject of the field welds joining the steel parapet sections. You will note that Mr. Silano indicates these these field welds can be eliminated.

You may proceed to contact the contractor for negotiation leading to the elimination of these field welds.

We concur with Mr. Silano's recommendation that if these field welds are eliminated, the joints should be suitably sealed with a good grade caulking compound.

This change should result in a subtantial savings to the contractor. The price agreement covering this change should relect that fact.

WJH/ag

Attach.

cc ~~E. S. Hunter w/attach.~~
R. N. Bothman w/attach.
H. A. Schell w/attach.

NOTED
E. S. HUNTER

7276
Consult.

2045-A040

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 232 117

ENGINEERS

June 11, 1973

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

7276 Consult.

NOTED
A.E. JOHNSON

Re: Fremont Bridge
Field Weld at Parapet Joints

Dear Mr. Hart:

With reference to your letter of June 8, 1973 concerning the eliminating of the field welds joining adjacent parapet sections shown in Section M-M, Sheet 45 of the contract drawings; please be advised that these welds were called for to provide structural continuity to the parapet and to exclude water from penetrating areas inaccessible for maintenance.

Should you decide to eliminate the field welds, continuity will be maintained by the overlapping of the adjoining sections and the attaching 3-1"ø high strength bolts. A good grade polysulfide or approved equal caulking should be considered to exclude moisture.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L.G. Silano
Project Engineer

LGS:mc

cc: A.E. Johnson

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STATE HWY ENGR
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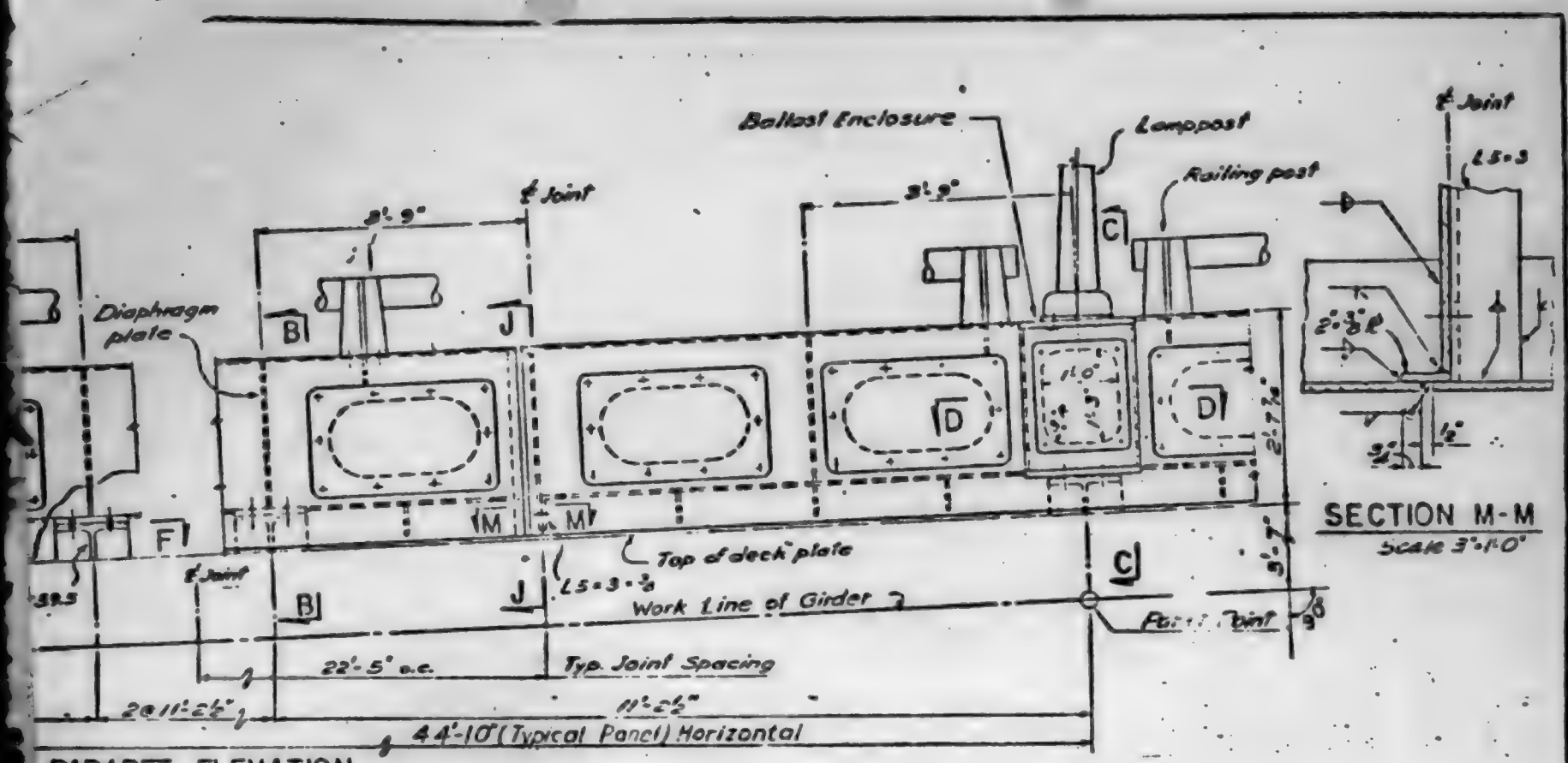
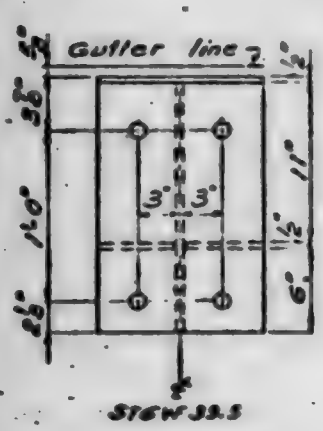
FOR
Chief | Asst | Adm | Dir | Design | Act | File

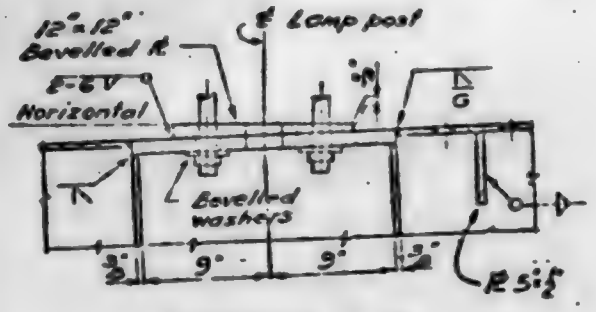


PARAPET ELEVATION

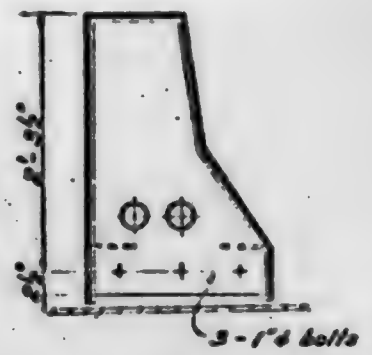
SECTION M-M
Scale 3"-1'-0"



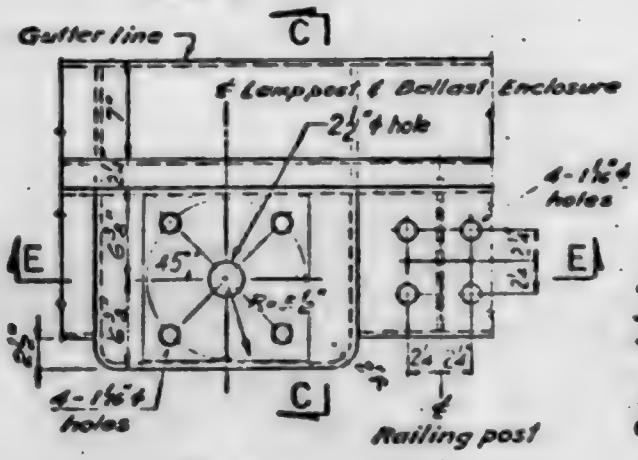
SECTION F-F



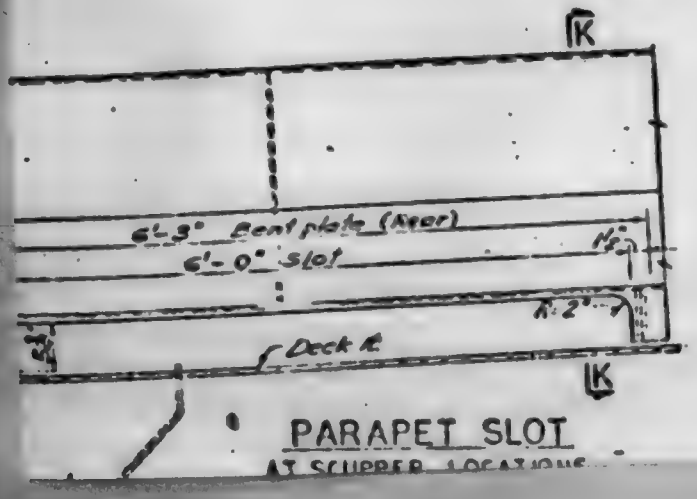
SECTION E-E
Scale 1½"-1'-0"



SECTION J-J



PLAN



PARAPET SLOT
AT SCUPPER LOCATIONS

NOTES:

1. For General Notes see Sheet No.3.
2. All plates shall be ⅜" unless otherwise noted.
3. All fillet welds shall be ¼" unless otherwise noted.
4. All bolts shall be ASTM A-325 bolts, ⅞" diameter, unless otherwise noted.
5. All steel shall be ASTM A-588 corrosion resistant.
6. For locations of railing posts and detail of anchor bolts see Sheet No. 43.
7. For locations of ballast enclosures and lamp posts and detail of anchor bolts for lamp post see electrical drawings.
8. For locations of scuppers see Sheet No. 46.
9. For "Structural Steel Notes," see Sheet No.16.

NOTE
THE SCALE OF THIS PRINT IS ½ THAT OF THE ORIGINAL DRWG
FOR EXAMPLE
INDICATED SCALE ½"-1'-0"
SHOULD BE READ ¼"-1'-0"
INDICATED SCALE 1"-1'-0"
SHOULD BE READ ½"-1'-0"

DATE	REVISION
5-7-51	Add Railing post detail

APPROVED

OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

FREMONT BRIDGE
STADIUM FREEWAY
MULTNOMAH COUNTY

2045-A040

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2493 • RCA 232 117

ENGINEERS

7276
Consult.

May 18, 1973

Mr. Alpo J. Tokola, Project Manager
Murphy Pacific Enterprises
5051 N. Channel Avenue
Portland, Oregon 97217

- # 7276 Consult.

Re: Fremont Bridge
Repair of Tie Girder Slots

NOTED
A. E. JOHNSON

Dear Mr. Tokola:

We are enclosing a copy of Earl and Wright's Drawing RD1, "Tie Girder Slots - Repair" marked "Revise and Resubmit."

As noted on the drawing, the slot ends should be rounded and the slots ground smooth. It was noted during our visit to the bridge in March that these slots were roughly cut and need to be ground smooth. This rounding and grinding should be applied to all of the slots which were cut in the girder for erection purposes.

Also, we have indicated on the drawing that the cover plates over the slots should be extended to include an additional line of bolts and that it would be desirable to avoid locating the bolts in close proximity to the slot terminations.

Please furnish us with the repair details for the other tie girder slots which have been made for erection purposes.

Should you have any comments, please do not hesitate to contact us.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L.G. Silano
Project Engineer

LGS:mc
cc: A.E. Johnson
W. Hart w enc.
R.O. Cunningham w enc.
H.S. Coulter

2045-A040

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK TELEX WU 1-2403 • RCA 232 117

ENGINEERS

May 18, 1973

7276
Consult.

Mr. Walter I. Hart, Bridge Engineer
Oregon State Highway Division
Highway Building
Salem, Oregon 97310

7276 Consult.

Re: Fremont Bridge
Bent Plates at Panel Points 14 and 14'

Dear Walter:

As requested in a telephone conversation with your office, we are enclosing a reproducible of Drawing SK-21, "Bent Plates at Panel Point 14 - Upper Flange."

This drawing shows the proposed bent plate details to be used for the arch rib intersection with the tie girder upper flange at Panel Points 14 and 14'. This drawing supplements drawing "Bent Plates at Panel Point 14," which was transmitted to you on April 6, 1973.

Should you have any comments, please do not hesitate to contact us.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L. G. Silano
Project Engineer

LGS/nw

Enc.

cc: A. E. Johnson
R. O. Cunningham
H. S. Coulter

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FOR
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NOTED
A. E. JOHNSON

A. E. Johnson 5

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PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
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ENGINEERS

May 14, 1973

72716
Consult.

Murphy Pacific Enterprises
5051 North Channel Avenue
Swan Island
Portland, Oregon 97217

RECEIVED
STATE HWY ENGR
MAY 16 73
REFER TO
FOR
MAT | STRUC | GEO | DIR | SHEN | ADM | FILE

Attn: Mr. Alpo J. Tokola
Project Manager

Re: Fremont Bridge
Center Span Erection

- 12 16 Consult.

Gentlemen:

We are returning your drawings with the following dispositions:

Drawing No.	Description	Action
69500-FE8, Rev. 10	Center Span Erection Procedure	Reviewed as Noted
69500-ST1, Rev. 9	Stress Sheet One	Revise and Resubmit

Our comments are noted on the drawings, however, we would like to emphasize the following:

Dwg. 69500-FE8

Please furnish the proposed sequence of erecting the lower deck steel for the center span. The structure should be checked for intermediate loadings which would occur during placing of the lower deck steel. The results of the check should be furnished for our review.

The temporary ties at Panel Points 13 and 13' should not be removed until after bolting up the columns at Panel Points 13 and 13'.

NOTED
A. E. JOHNSON

Please send details of the repairs to the slots in the girder flanges for review.

Step 1 of Stage Three states that columns 6 - 9, 11 and 12 may be bolted at any time prior to jacking the bearings 1E to their theoretical stations (Case 7). However, according to the notes on Dwg. 69500 - ST1, "Stress Sheet One," it appears that these columns will be bolted up during Case 5 "Deck Sections Bolted" and not during any later cases - please clarify.

Dwg. 69500-ST1

It appears that there is an error in your computer runs for Cases 5 - 8. According to the note on Dwg. 69500-FE8, Rev. 10, "Center Span Erection Procedure," Piers 1E and 1W were placed at theoretical grade during Stage One. However, the latest computer runs for Cases 5 - 8 do not include a lowering of $\Delta Y = -.305'$ at Panel Point 0. This lowering is required to place the bearings at Panel Point 0 at their theoretical grade - please check.

Should you have any comments, please do not hesitate to contact us.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G Silano

L. G. Silano
Project Engineer

LGS/nw

Encs.

cc: A. E. Johnson
W. Hart
R. O. Cunningham
H. S. Coulter

7276
Consult.

2045-A040

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
ENGINEERS
[illegible] STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
[illegible] PASKLAP NEW YO TELEX WU 1-2403 • RCA 232 117

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FOR
Note
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Act
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May 1, 1973

Mr. Walter J. Hart, Bridge Engineer
Oregon State Highway Division
Highway Building
Salem, Oregon 97310

#7276 Consult.

NOTED
A. E JOHNSON

Re: Fremont Bridge
South Girder
Diaphragms at Panel Points 21 and 22

Dear Walter:

The enclosed drawing "Section thru South Girder at Panel Point 22" has been prepared in answer to a phone call from R.O. Cunningham on April 9, 1973 and a subsequent letter from D. Bacon on April 24, 1973. As described in the phone call and letter, the South Girder Diaphragms at Panel Points 21 and 22 have been interchanged during the fabrication of the south girder. Thus, the diaphragm shown in Section C on Murphy Pacific Shop Drawing K3513-603CE has been installed at Panel Point 22, and the diaphragm shown in Section D on Murphy Pacific Shop Drawing K3513-603BE has been installed at Panel Point 21.

We propse that no remedial measures be taken at Panel Point 21, as the diaphragm shown in Section D is more thanadequate for this location.

We propose that the South Girder Diaphragm at Panel Point 22 be modified as shown in our drawing. The new 5/8" diaphragm plates can be entered into the girder via the girder manhole between Panel Points 21 and 22. However, it will be necessary for the contractor to split the plates in order to pass them through the 20"ø manhole. After entering, the plates can be spliced to full size. We expect that the contractor will submit his shop drawings and assembling procedures to this office for our review prior to proceeding with this work.

Should you have any questions, please do not hesitate to contact this office.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L.G. Silano
Project Engineer

LGS:mc
Enc.
cc: A.E. Johnson
R.C. Cunningham w enc.

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, Inc.
COMPUTATION SHEET

Subject FREMONT BRIDGE
SECTION THRU S. GIRDER @ P.P. 22

Page ____ of ____
Made by M. ABRAHAMS
Date 1-27-73
Checked by L.G.S.
Date 5-1-73

(12)

4" TOTAL EACH FACE

2-4" x 1/2" PL's

5/8" PLATE

TYP.

2-4" x 7/8" PL's

2-4" x 7/8" PL's

2-4" x 1/2" PL's

3'-0"

A

A

R=72"

SCALE 3/4"=1'-0"

7/8" PL's

B

B

SECTION A
SCALE 3/4"=1'-0"

5/8" PL

7/8" PL

SECTION B
SCALE 3/4"=1'-0"

SEE NOTE 4
CONTRACT DWG.
25241

2-7/8" PL's

REMOVE EXISTING 1/2" PL's

5/8" PLATE TO BE SPLIT IN ORDER TO ENTER GIRDER THROUGH 20" ϕ MAN HOLE @ P.P. 22, TYP.

NOTES

1. ALL STEEL SHALL BE A-36.
2. ALL WELDING SHALL BE IN ACCORDANCE WITH LATEST O.S.H.D. SPECS.
3. FILLET WELDS SHALL BE MAGNETIC PARTICLE INSPECTION.
4. BUTT WELDS SHALL BE ULTRA-SONICALLY INSPECTED.
5. WORK TO BE COMPLETED PRIOR TO ERECTING LOWER DECK @ P.P. 22.
6. ALL FILLET WELDS TO BE MINIMUM 5/16".

SCALE 3/4"=1'-0"

7276
Consult

Salem, Oregon
April 12, 1973

Walt Hart
Bridge Design Engineer

Invoices, PBQ&D
Fremont Bridge
Contract 7276

Consult.
File

Attached are two copies of a billing from Parsons, Brinckerhoff, Quade and Douglas, Inc., representing the final bill for extra work in conjunction with the modification of Panel Point 3.

In submitting this invoice, Mr. Hedefine and Mr. Silano indicated that the first invoice was for work other than Panel Point 3 and that the remaining invoices contain elements of work not directly associated with redesign of Panel Point 3 but are instead investigative and analytical work done at our direction and for which they feel they should be compensated.

Also returned are the invoices originally submitted together with a summary.

Will you please analyze these with respect to the statements by Mr. Hedefine and Mr. Silano and submit your recommendations as to payment.

A. E. Johnson
Deputy State Highway Engineer

AEJ:ja

Attachments

cc F.B. Klaboe

5

7276
Consult

OREGON STATE
HIGHWAY DIVISION

Consult. File

HIGHWAY BUILDING • SALEM, OREGON • 97310

April 5, 1973

TOM McCALL
GOVERNOR

GEORGE M. BALDWIN
Administrator of Highways

Parsons, Brinckerhoff, Quade & Douglas
111 John Street
New York, NY 10038

Attention Mr. L. G. Silano

Gentlemen:

Shop Drawings
Lower Deck Resteel
Fremont Bridge
Contract 7276

In answer to your question on Gilmore Steel Contractor's shop drawings, the shop drawings you have are complete.

The listing in our letter of March 28, 1973 should have been Drawings L1 and L2 with sheets 1 through 18 and 20 through 25. There is no sheet 19.

Very truly yours,

Walter J. Hart
Bridge Engineer
By ORIGINAL SIGNED
R.W. ELLISON
R. W. Ellison
Bridge Administration Engineer

NOTED
E. S. HUNTER

TGT:dh

cc E. S. Hunter
R. N. Bothman
R. O. Cunningham
C. T. Keasey

RECEIVED
APR 6 1973
OFFICE OF
ASSISTANT STATE HIGHWAY ENGINEER

7276 Consult

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 232 117

ENGINEERS

#7276 Consult.

April 3, 1973

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MR 6 73
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Info | Prep | Ref'D | DIR | Sign | Act | File

Mr. A. E. Johnson
Deputy State Highway Engineer
Department of Transportation
Highway Building
Salem, Oregon 97310

NOTED
A.E. JOHNSON

Subject: Fremont Bridge

Dear Mr. Johnson:

When we were at the site of the lifting of the center span of the Fremont Bridge during the week of March 12th, I had the opportunity of discussing very briefly with you certain financial matters pertaining to our services as your consulting engineers for the Fremont Bridge. You suggested that we should discuss them at an opportune time, and I mentioned I would be coming to the west coast the week of April 9th, and we tentatively agreed that we would meet on Wednesday, April 11th.

This is to inform you that Messrs. Kuesel, Silano and myself will arrive in your offices in Salem about 1, 00 p. m. on Wednesday, April 11th. Looking forward to seeing you.

Very truly yours,

Alfred Hedefine

Alfred Hedefine

AH/pcs

CC: Mr. Walter S. Hart

OREGON STATE
HIGHWAY DIVISION

7276

HIGHWAY BUILDING • SALEM, OREGON • 97310

Contract 2.

TOM McCALL
GOVERNOR

GEORGE M. BALDWIN
Administrator of Highways

March 21, 1973

Mr. Louis G. Silano
Parsons, Brinckerhoff, Quade & Douglas
111 John Street
New York, NY 10038

Dear Mr. Silano:

Expansion Joints
Fremont Bridge
Contract 7276

During your recent visits to Portland we discussed the problem of the gaps in the expansion joints on the Fremont Bridge. Considerable concern has been expressed that the gaps between the fingers are such as to create a hazard to motorcycles.

At the time of our last conversation you indicated you had given some thought to a possible solution to this problem. I would appreciate your recommendations on possible revisions to these expansion joints to eliminate this potential hazard.

Very truly yours,

Walter J. Hart

Walter J. Hart
Bridge Engineer

WJH:dh

cc E. S. Hunter
H. A. Schell
R. N. Bothman
R. O. Cunningham

NOTED
E. S. HUNTER

RECEIVED
MAR 22 1973
OFFICE OF
ASSISTANT STATE HIGHWAY ENGINEER

7276
Contract

FORM 8-50

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

NOTED
A.E. JOHNSON

DATE March 5, 1973

TO Memo to the Files

FROM Walter J. Hart
Bridge Engineer

ORIGINAL SIGNED
WALTER J. HART

SUBJECT Panel Point 14
Fremont Bridge
Contract 7276

(Contract.

At 8:55 a.m. today a call was received from Mr. Silano of Parsons, Brinckerhoff, Quade & Douglas. The purpose of his call was to expand on the comments contained in his letter of March 1 relative to Panel Point 14. He was concerned that if the transverse weld between the arch rib and tie girder flanges are removed in their entirety that this operation be done prior to the lift. He was advised that this weld would be removed only in the area of the slots and that this work was being done at the present time.

Mr. Silano indicated some concern that the steel filler slugs in the bottom flange might not be removed prior to the lift. He was advised that operations leading to removal of the steel filler slugs should have been underway as of this morning.

In the meetings of February 15 and 16, 1973 between the contractor, the State and Parsons, Brinckerhoff, Quade & Douglas there was some indication that the contractor may use the jacks at Falsework 2 as part of his adjustment procedure during the lift and closure of the span. Parsons, Brinckerhoff, Quade & Douglas have received nothing from the contractor on any such proposal. Any adjustment of the jacks at Falsework 2 will create stresses in the structure which must be evaluated before such a procedure can be approved.

WJH:dh

cc A. E. Johnson
H. S. Coulter
R. O. Cunningham
H. A. Schell

RECEIVED
STATE HWY ENGR
MAR 5 '73
REFER TO
FOR
Info | Inves | R/D | D/R | Sign | Act | File

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 232 117

ENGINEERS
ARCHITECTS
PLANNERS

WALTER S. DOUGLAS
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
SEYMOUR S. GREENFIELD
WILLIAM T. DYCKMAN
THOMAS R. KUESEL
WINFIELD G. SALTER
HENRY L. MICHEL
PERRY D. LORD
MARTIN RUBIN

WILLIAM BARCLAY PARSONS 1885-1932
HENRY M. BRINCKERHOFF 1919-1945
MAURICE N. QUADE 1932-1966

ASSOCIATED CONSULTANTS
EUGENE L. MACDONALD
ALFRED HEDEFINE
JOHN O. BICKEL
BUSH F. ZIEGENFELDER
ROBERT H. MEADE
DONALD C. HYDE
JOHN J. WHITE

7276
Consult.

February 1, 1973

J

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STATE HWY ENGR
FEB 6 '73
REFER TO
FOR
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Mr. George M. Baldwin
Administrator of Highways
Oregon State Highway Division
Highway Building
Salem, Oregon 97310

NOTED
A. E. JOHNSON

Attention: Mr. Walter J. Hart
Bridge Engineer

Subject: Fremont Bridge
Center Span Lift

Dear Mr. Baldwin:

We received your letter addressed to Mr. Silano of our staff concerning the schedule that has been set for lifting the center span of the Fremont Bridge during the week of 12th March, 1973, and your kind invitation to observe this field operation.

Because of our role as consulting engineer for the design of this structure, and our intimate contact with its details, we are very much interested in being at the site when this lifting operation takes place. Messrs. Kuesel, Fiore, Silano, Abrahams and myself are planning to be present on this occasion. Should the erection dates remain firm, we plan to be in Portland, Oregon, on Monday, March 12th, and will remain there for the entire operation. We would like to be among those who will have the opportunity to observe the action from the closest range.

Thank you for your kind invitation. We continue to be at your service.

Very truly yours,

Alfred Hedefine

Alfred Hedefine

AH/pcs

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FEB 6 1973
BRIDGE DIVISION

Gen. Files

2045-A040

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

January 10, 1973

7276
Consult

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Stay-In-Place Forms

NOTED
A. E. JOHNSON

Dear Walter:

Supplementing our letter to you on January 5, 1973 wherein we discussed several points with respect to the McLean Steel Company Drawing for the "Steel Bridge Deck Forms", we would like to add a further point to that discussion.

The depth of the proposed concrete lower deck with a stay-in-place metal form is shown as 8-3/8" in the "Typical Slab Detail" as well as in Section "B" of the McLean Drawing. However, Design Drawings 25232 and 25233 call for a 7" concrete slab with a 1/2" haunch at the stringers for a total depth at the stringers of 7-1/2". Thus the proposed concrete lower deck with the stay-in-place metal form as detailed will extend 7/8" above the originally designed slab. This will affect expansion dams, clearances, and meeting the approach roadway. The McLean Drawing should be revised and detailed such that upon completion of the proposed concrete slab with the stay-in-place metal forms the roadway surface will be at the same elevation originally intended.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC

L.G. Silano
Project Engineer

LGS:ms
cc: A.E. Johnson
R.O. Cunningham
H.S. Coulter
H.A. Schell, Jr.

RECEIVED
JAN 15 1973
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

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ENGINEERS

2045-A040

7276

Consult.

January 8, 1973

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

NOTED
A. E. JOHNSON

Re: Fremont Bridge
Stay-In-Place Forms

Dear Walter:

This is to confirm and amplify our telephone conversation of January 8, 1973 with Mr. J. Wood of your office relative to the stay-in-place forms for the lower deck concrete. In our letter to you dated January 5, 1973 we indicated that the deck details utilizing the stay-in-place forms would add some 10% to the weight of the concrete deck slab over the deck originally contemplated in the design. This increase in the dead load affects the local members and the overall structure as follows:

1. Local Members: The lower deck floorbeams, stringers, hangers and their connections are directly affected and a 10% increase would increase the dead load stresses for these members by approximately 10%.

2. Overall structure: The lower deck concrete constitutes some 27% of the total dead load of the structure, hence, an increase of 10% would by proportioning increase the dead load stresses by approximately 2.7%.

The influence of this increase in dead load can very easily be assessed for the local members; however, its effect on the main structure is more difficult and can only be assessed by a rigorous analysis. This analysis should be conducted before your approval is extended permitting the use of stay-in-place forms.

RECEIVED
JAN 10 1973
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

If we can be of further assistance, please advise.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L.G. Silano
Project Engineer

LGS:mc

cc: A.E. Johnson
R.O. Cunningham
H.S. Coulter
H.A. Schell, Jr.

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111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 232 117

ENGINEERS

January 5, 1973

7276
Consult

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

NOTED
A. E. JOHNSON

Re: Fremont Bridge
Stay-in-Place Metal Deck Forms

Dear Mr. Hart:

We are in receipt of your memorandum of December 8, 1972 to Mr. R.O. Cunningham wherein you requested our comments on the contractor's request to use stay-in-place metal deck forms for the lower deck concrete slab.

We are certain that you are well aware of the arguments concerning the shortcomings associated with the use of permanent stay-in-place metal forms. After discussions with members of our staff we would not, as a matter of practice in our designs, specify or recommend the use of stay-in-place steel forms for a bridge of this nature. In our judgment, the potential problems created by stay-in-place metal forms, in addition to the corrosion effects of a marine or harsh environment, outweigh the benefits gained in construction time and cost savings. But, we also appreciate your position in accepting the use of these forms on the Fremont Bridge where there is the possibility of potential savings in time in the completion of the bridge.

In reviewing the McLean Steel Company Drawing for these "Steel Bridge Deck Forms" there are several points that we call to your attention:

1. The proposed 8 3/8" concrete deck along with the stay-in-place metal forms will increase the weight of the lower deck approximately 10% over that of the original 7" concrete deck without stay-in-place metal forms. The effects of this increase in the dead load should be evaluated for the overall structure.

2. The notes on the McLean drawing state that no deck construction joints will be allowed on metal forms. The deck placing sequence and details shown on Design Drawing 25269 for the three span continuous side spans require the construction joints to be offset from the centerlines of the floorbeams to locations where the McLean drawing calls for stay-in-place forms. This obviously is in conflict with McLean's requirements. Further, the construction joint detail shown on Design Drawing 25269 is not compatible with stay-in-place forms.

3. It is not clear on the McLean drawing as to what type of steel will be used for the form supports nor if all of these items will be galvanized. This should be clarified.

4. The Federal Highway Administration Specifications which are attached to Instructional Memorandum 40-3-72 and the notes on the McLean drawing state that "Form sheets shall not be permitted to rest directly on the top of the stringer or floor beam flanges." However, Section "B" on the McLean drawing calls for a 6'-0" sheet which would rest on the stringer flanges. There appears to be a conflict.

5. The "Typical Panel" plan on the McLean drawing calls for no welding to the stringer flanges for the end 1/4's of all stringers. This requirement is acceptable for the simple span stringers between Panel Points 1-3 and 13-24; however, it appears that this requirement may not be acceptable for the continuous span stringers between Panel Points 3-13 and it should be investigated.

Should you have any comments, please do not hesitate to contact us.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano

L.G. Silano
Project Engineer

LGS:mc
cc: A.E. Johnson ✓
R.O. Cunningham
H.S. Coulter
H.A. Schell, Jr.

RECEIVED
JAN 8 1973
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

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Consult.

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE
Salem, Oregon

DATE November 21, 1972

TO Mr. H. S. Coulter
Metropolitan Engineer

FROM Walter J. Hart
Bridge Engineer

ORIGINAL SIGNED
WALTER J. HART

NOTED
A. E. JOHNSON

SUBJECT Strut at Panel Point 13
Fremont Bridge
West Side Span

You have a copy of a letter of November 16, 1972, from Mr. Silano of Parsons, Brinckerhoff, Quade & Douglas on the subject of the strut at Panel Point 13. This is the latest in a series of correspondence on the mismatch in the make-up of this member.

In his November 16 letter Mr. Silano again recommends a fabrication and installation of new lateral plates. Please take steps to have these plates replaced as recommended.

WJH:dh

cc A. E. Johnson
R. O. Cunningham
H. A. Schell
L. G. Silano

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NOV 21 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

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PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

7276
Consult.

November 16, 1972

Mr. Walter J. Hart
Bridge Engineer
Oregon State Highway Division
Highway Building
Salem, Oregon 97310

Re: Strut at Panel Point 13
Fremont Bridge
West Side Span

NOTED
A. E. JOHNSON

Dear Mr. Hart:

With reference to your letter, dated October 27, 1972, concerning the diagonal to strut connection at Panel Point 13, we would like to emphasize that during our study and review of the circumstances that precipitated the problem we endeavored to provide a solution which would utilize the existing plates; however, any corrective measures that could conceivably be undertaken to better a particular situation would only lead to a worse situation elsewhere. Under the present circumstances, the scheme proposed by Mr. R. Cunningham to make up these connections would involve a combination of distorting the strut and slotting or oversizing the bolt holes.

As a consequence of distorting the strut to accommodate the connection, objectionable stresses are induced which are permanent and would cause serious overstressing. To minimize the distortion to the strut would require slotted holes of a length where the edge distances and the separation between slots would be critical.

In our judgment, the preferable solution in order to rectify a situation of combined fabrication errors, member distortion, misalignments and erection tolerances, and to control it to within known definable parameters is to fabricate new plates, and to install them in the manner outlined in our earlier correspondence.

As to your question, whether the distortion of the structure can be predicted with sufficient accuracy to permit fabrication

of new plates at the present time, we are certain that the distortion referred to (axial shortening of the arch rib) can be reliably computed from the dead load stresses. This is a common everyday camber procedure used to reliably control dead load geometrics in truss construction.

It is our opnion that new plates are definitely required and that they should be installed prior to erecting the center span. The strut at Panel Point 13, along with its lateral bracing, is an important part of the arch's stability and the bridge's wind bracing system. This system should be functioning when the center span is lifted. We deem it inadvisable to delay installing new plates until after the center span is erected on the supposition that the existing plates might be made to fit. To install new plates after the main span is erected would place the structure in a vulnerable position which should be avoided.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L.G. Silano
Project Engineer

LGS:mc

cc: A.E. Johnson
H.S. Coulter
R.O. Cunningham
H.A. Schell

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NOV 30 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

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NOV 8 1972
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HIGHWAY BUILDING • SALEM, OREGON • 97310

7276
Consult.

November 8, 1972

Mr. Louis G. Silano
Parsons, Brinckerhoff, Quade & Douglas
111 John Street
New York City, New York 10038

NOTED
A. E. JOHNSON

Dear Mr. Silano:

Fremont Bridge
Panel Point 14 Detail

This will confirm our telephone conversation of November 8, 1972, relative to our concern over the panel point 14 detail.

As indicated in my letter of October 24, I am concerned with the notch effect created by the slots in the flanges. In addition I am concerned with the weld details at the flanges. I question the use of the 1/2 inch fillet welds across the tension flange. It is our in-house practice to never permit a full weld across the tension flange. The only welds permitted across a tension flange are short weld returns or welded stiffener connections with weld lengths limited to approximately 1 1/2 inches.

We are conducting a review of the mill reports for the flange plates at panel point 14. In addition we are contemplating further non-destructive testing of the key welds in the panel point 14 connection. I will keep you informed on the progress of this phase of the panel point 14 review.

Very truly yours,

George M. Baldwin
Administrator of Highways
By Walter J. Hart
Walter J. Hart
Bridge Engineer

WJH/ag
cc A. E. Johnson
H. S. Coulter
R. Cunningham
H. A. Schell

RECEIVED
NOV 8 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

OREGON STATE HIGHWAY DIVISION

7276

HIGHWAY BUILDING • SALEM, OREGON • 97310

October 27, 1972

NOTED
A. E. JOHNSON

Mr. Louis G. Silano
Parsons, Brinckerhoff, Quade & Douglas
111 John Street
New York, New York 10038

RECEIVED
OCT 30 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

Dear Mr. Silano:

Strut at Panel Point 13
West Side Span
Fremont Bridge

We have reviewed the problem of the diagonal to strut connection at Panel Point 13 West as set forth in Mr. Cunningham's letter of September 11 and your letter of September 20, 1972. The one point I question is whether the distortion of the structure can be predicted with sufficient accuracy to permit fabrication of new pg and ph plates at this time.

The procedure proposed by the contractor and recommended by Mr. Cunningham in his letter of September 11 would permit the structure to take distortion under the weight of the 902-foot center span section before making a commitment on new connection plates. If after the center span lift the connection cannot be made up with one inch bolts, then the lateral plates could be replaced.

I realize that this subject has seen considerable previous discussion. If after giving the problem one last look you still believe that the pg and ph plates should be replaced at this time, we will defer to your opinion and will so advise the contractor.

Very truly yours,

George M. Baldwin
Administrator of Highways
By
ORIGINAL SIGNED
WALTER J. HART
Walter J. Hart
Bridge Engineer

WJH:dh

cc A. E. Johnson
H. S. Coulter
R. O. Cunningham
H. A. Schell

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OCT 20 1972
FOR FILING

OREGON STATE HIGHWAY DIVISION

HIGHWAY BUILDING • SALEM, OREGON • 97310

October 24, 1972

7276
Contract

Mr. Louis G. Silano
Parsons, Brinckerhoff, Quade & Douglas
111 John Street
New York, New York 10038

NOTED
A. E. JOHNSON

Dear Mr. Silano:

Fremont Bridge
Panel Point 14 Detail

I am concerned with the detail at Panel Point 14 where the discontinuity in the top and bottom flanges exists. The stress concentration effect of the slots in the flanges, plus the manner in which the section will go under load, makes this a suspect area. After the experience at Panel Point 3, any detail of this nature should receive a second look. Will you please review the detail where the arch rib passes through the slots in the girder flanges and give me your comments on its adequacy.

It appears that current delays in fabrication of the new Panel Point 3 sections will delay the lift of the center span to mid February of 1973.

I would appreciate a progress report on the submittal and approval of any remaining shop drawings or erection drawings for this project.

Very truly yours,

George M. Baldwin
Administrator of Highways
By ORIGINAL SIGNED
WALTER J. HART
Walter J. Hart
Bridge Engineer

WJH:dh

cc A. E. Johnson
H. S. Coulter
R. O. Cunningham
H. A. Schell

RECEIVED
OCT 25 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

RECEIVED
SEP 25 1972
FOR FILING
7276
Consult

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

DATE September 14, 1972

TO R. O. Cunningham
Resident Bridge Engineer

FROM Walter J. Hart
Bridge Engineer

NOTED
A. E. JOHNSON

SUBJECT Fremont Bridge
Repairs to Laminated Areas
Contract 7276
Bridge 2529

Enclosed are six prints of Drawing SK 9, Revision 1,(Parsons, Brinckerhoff, Quade and Douglas, Inc.) which shows the proposed repair procedure for the laminated areas of the north arch rib bottom flange plate near Panel Point 10.

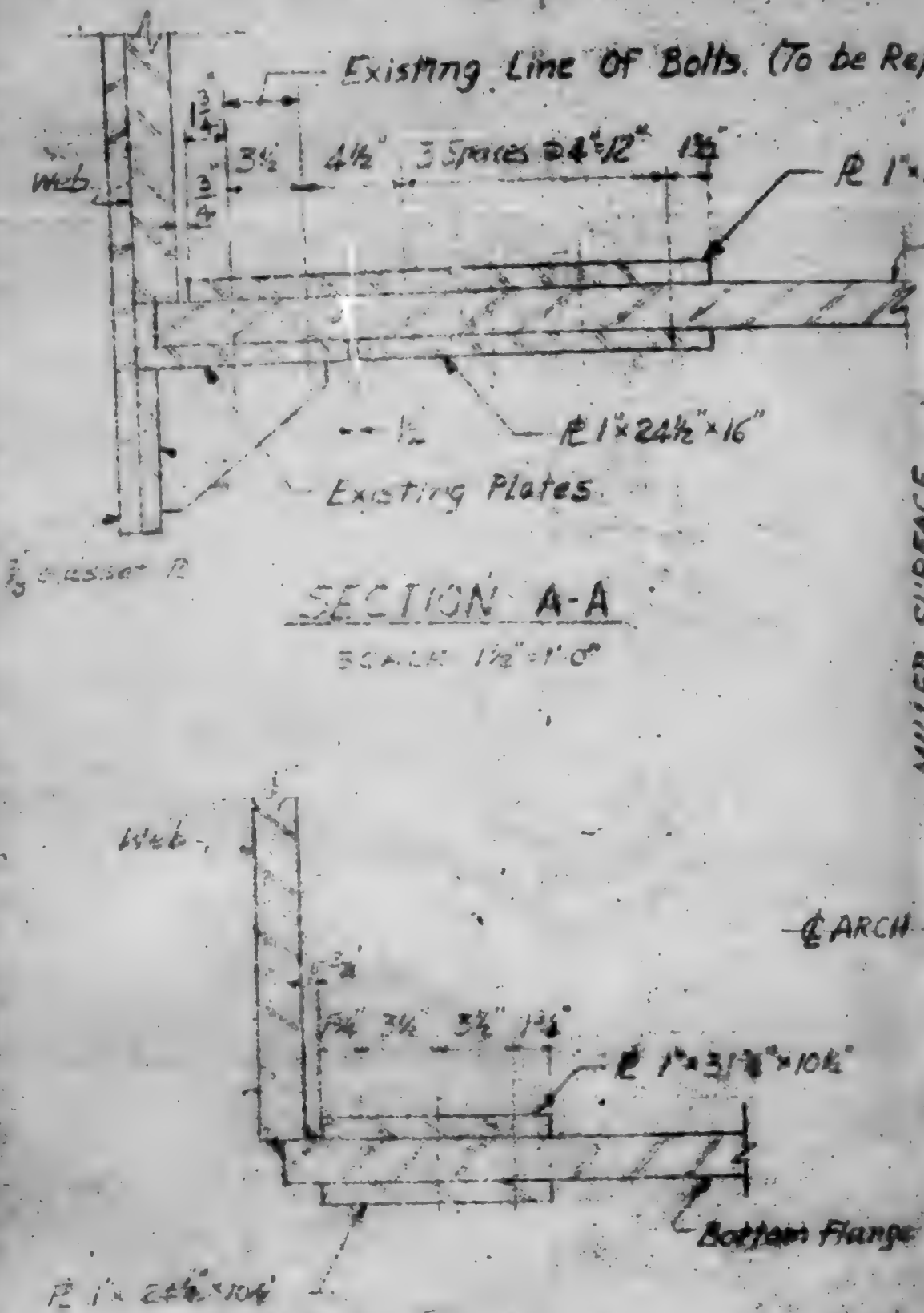
Clean-up and painting of the repair should include not only the plates and bolts but also the edges of the flange to insure sealing of any lamination that extends to the plate edge.

JEB/dh/ag

Encls.

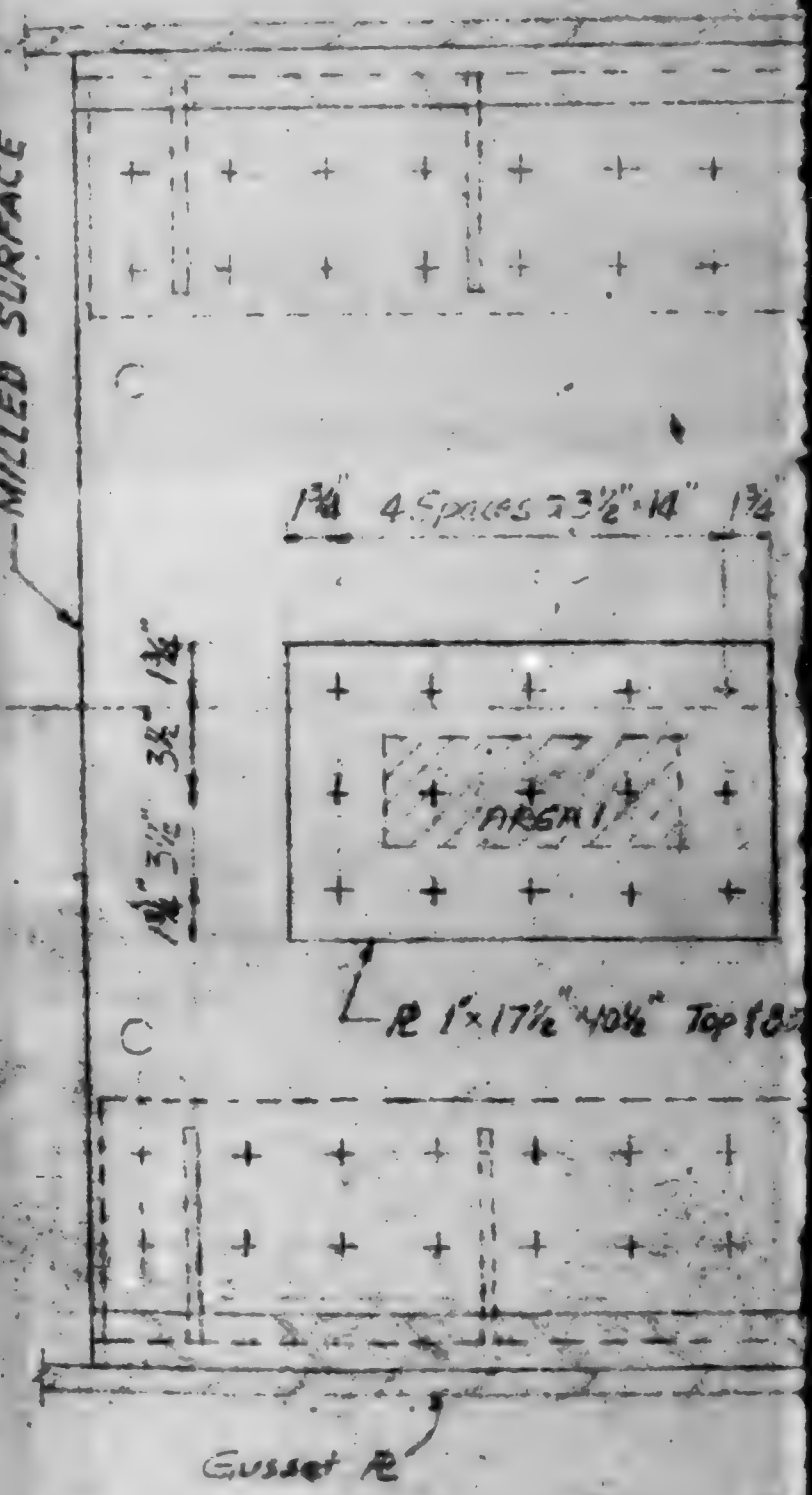
cc A. E. Johnson w/encl.
H. S. Coulter w/encl.
Mr. Louis Silano w/encl.
Federal Highway Adm. w/6 encls. - Please return 1 approved copy

RECEIVED
SEP 14 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER



SECTION A-A

SCALE 1½"=1'-0"



SECTION B-B

SCALE 1½"=1'-0"

NOTES

1. ALL NEW PLATES SHALL BE ASTM-A36
2. ALL BOLTS SHALL BE 1"Ø ASTM-A325
3. CLEAN AND PRIME FAYING SURFACES AS PER SPECS. PAINT EXPOSED SURFACES OF NEW PLATES WITH FINISH COAT AS PER SPECS.
4. THIS WORK TO BE COMPLETED PRIOR TO ERECTING THE

Web

Bottom flange

SOUTH SIDE

SECTION C-C
SCALE 1½"=1'-0"

Gusset PL

Bottom flange

Cross hatching indicates Laminated areas.

3½"-14" 1¾ | 1⅝" 6 Spaces @ 3½"=21" 1¾

A

AREA 2

B

Place washers for bolts on e

C 1⅝" 3½" 3⅝" 6 Spaces @ 3½"=21" 1⅝"

AREA 3

A

NORTH SIDE

¼ 1¾" B

BOTTOM PL 24½" LONG.

PLAN OF BOTTOM FLANGE
SCALE 1½"=1'-0"

DWG.

OREGON STATE HIGH
BRIDGE DIVISIO

Web

Bottom flange

SOUTH SIDE

SECTION C-C
SCALE 1½"=1'-0"

½"

Web

Bottom flange

Cross hatching indicates Laminated areas.

ces = 3½" = 21" 1¾"

Place washers for bolts on outside

A

C

1⅛" 3½" 3⅛" 6 Spaces @ 3½" = 21" 1⅛"

C1

AREA 2

AREA 3

2½" 1¾"

½" 1¾" B

NCL

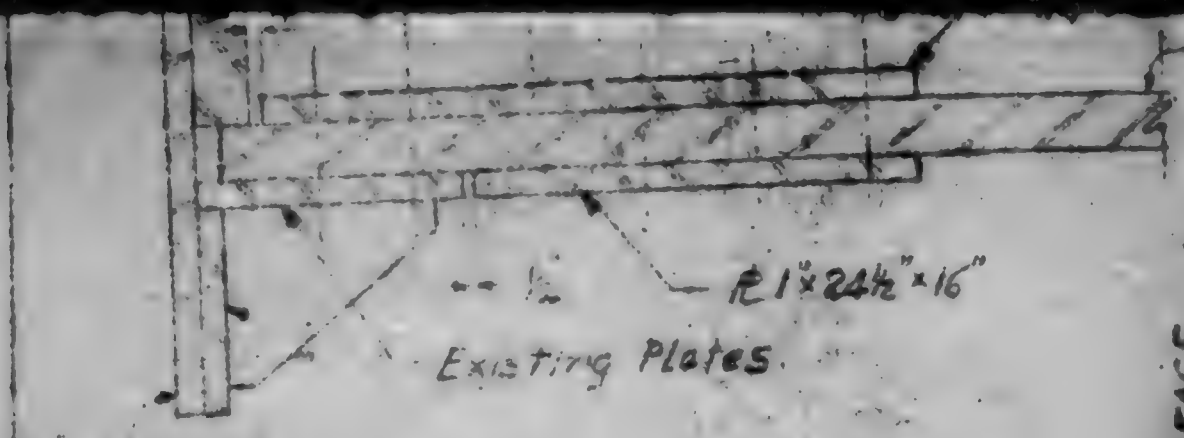
NORTH SIDE

BOTTOM PL 24½" LONG

AN OF BOTTOM FLANGE
SCALE 1½"=1'-0"

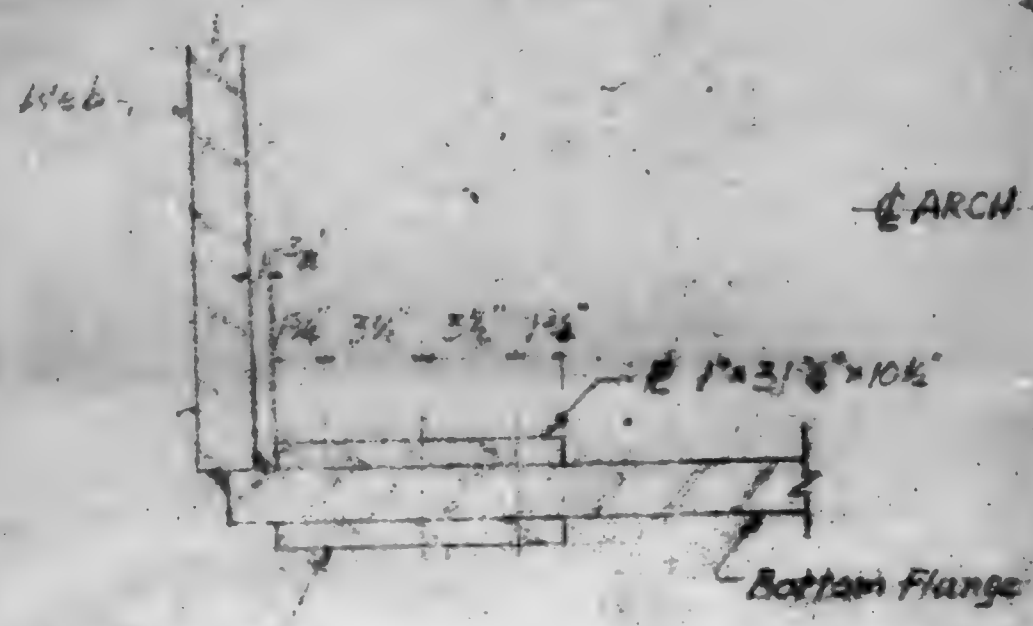
DWG. SK 9 Rev 1

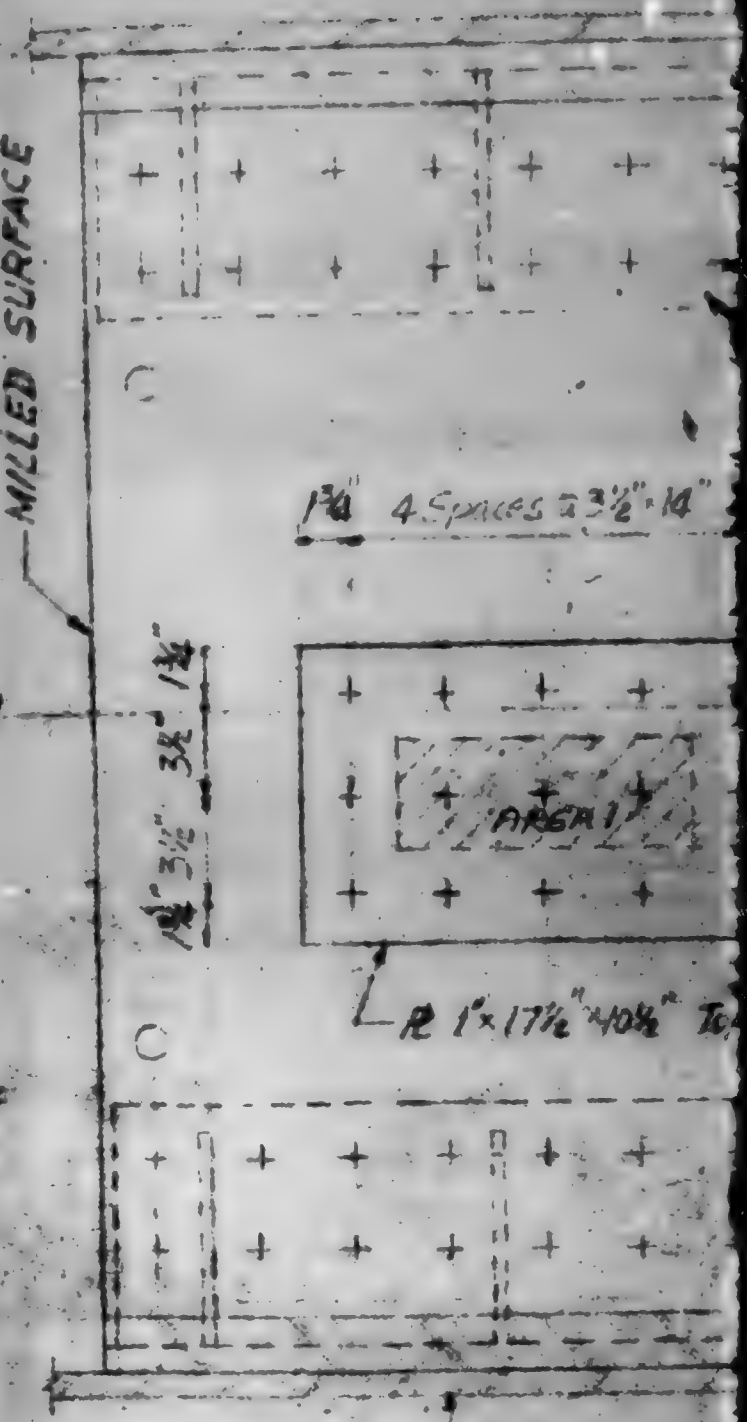
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION



SECTION A-A

SCALE 1½"=1'-0"





SECTION B-B

SCALE 1½"=1'-0"

NOTES

1. ALL NEW PLATES SHALL BE ASTM-A36
2. ALL BOLTS SHALL BE 1"Ø ASTM-A325.
3. CLEAN AND PRIME FAYING SURFACES AS PER SPECS. PAINT EXPOSED SURFACES OF NEW PLATES WITH FINISH COAT AS PER SPECS.
4. THIS WORK TO BE COMPLETED PRIOR TO ERECTING THE CENTER SPAN.

REF OREGON STATE HWY. DIVISION DWG.
"LAMINATED SECTION, TEST AREA" DATED 5-19-72
WORDEN AMERICAN BRIDGE SHOP DWG. K 3512-1170
"ARCH RTE"

SOUTH SIDE

Gusset PL

SECTION C-C
SCALE 1½"=1'-0"

½"

Bottom flang

Cross hatching indicates Laminated areas.

1⅞" 3½" 14" 1¾" 1⅞" 6 Spaces @ 3½" = 21" 1¾"

A

B

C

Place washers for bolts on

1⅞" 3½" 3½" 6 Spaces @ 3½" = 21"

AREA 2

AREA 3

½"x40½" Top flat

A

¼" 1¾" B

NORTH SIDE

BOTTOM PL 24½" LONG

PLAN OF BOTTOM FLANGE
SCALE 1½"=1'-0"

Revision 1 Sept. 7 1972

DWG

OREGON STATE HI BRIDGE DIV
FREMONT STADIUM FR MULTNOMAH
WEST SIDE REPAIRS TO LAMINA NORTH ARCH RIB
DATE 6-16-72 BY

PARSONS BRINCKERHOFF QUADE & DOUGLAS INC.
ENGINEERS NEW YORK N.Y.

SOUTH SIDE

SECTION C-C
SCALE 1½"=1'-0"

½ Web

Bottom flange

Cross hatching indicates Laminated areas.

es @ 3½"=21" 1¾"

B

Place washers for bolts on outside

C 1⅞ 3½" 3½" 6 Spaces @ 3½"=21" 1⅞" C

AREA 2

AREA 3

2½"

¾ 1¾" B

Web

NORTH SIDE

BOTTOM PL 24½" LONG

N OF BOTTOM FLANGE

SCALE 1½"=1'-0"

DWG. SK 9 Rev 1

Revision 1 Sept. 7 1972

PARSONS BRINCKERHOFF QUADE & DOUGLAS INC.
ENGINEERS NEW YORK N.Y.

OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION

FREMONT BRIDGE
STADIUM FREEWAY
MULTNOMAH COUNTY

WEST SIDE SPAN
REPAIRS TO LAMINATED AREAS
NORTH ARCH RIB R.15-R.19

DATE 6-16-72 BRIDGE NO. 2526

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PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAB NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

7276
Consult

September 12, 1972

NOTED
A.E. JOHNSON

NOTED
TOM EDWARDS

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Panel Point 3

Dear Mr. Hart:

Mr. Silano has informed me about your telephone call to him of Wednesday, September 6, 1972, in which you and he discussed the recent "crack" that developed in the free edge of the 2-3/4 inch web plate (pa) to be used for the remedial work involving Panel Point 3 of the Fremont Bridge.

We understand that the recent information in this matter conveyed to us by telephone and correspondence from American Bridge and Mr. John Jenkins, Engineer of Material and Research, OSHD, was furnished to us for information purposes only and we were not being asked or required to act on this problem.

From what we have learned from the Department to date, and what we surmise, we feel concerned about this plate that evidently is failing to meet the required specification for A 588 steel. We have also been told that you were having difficulty with all of the remedial plates (pa) in meeting the "bend test" requirements and with the "toughness" requirements (Charpy Impact Test).

It was our understanding that the State had rejected the "cracked" 2-3/4 inch web plate, and we are firmly in agreement with this decision. The "crack" which developed in the plate that we were informed about is indicative of the brittle nature of the material for this piece and this is corroborated by the results of the Charpy Impact tests as well as the brittle failure of the material in the "bend tests".

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We reaffirm the decision and recommend rejecting this plate for the reasons that it did not meet the Specifications, and that the material lacks toughness. If a similar crack to that which developed in the shop, under no load, were to develop in the critical tensile area of the 4-foot radius of the plate after being installed in the permanent structure - it probably would prove to be catastrophic.

It is quite apparent to us that the problems of the A 588 steel being used for the remedial plates at Panel Point 3 are due to defects inherent in the material as manufactured or fabricated. We are particularly concerned that there may be deficiencies in meeting the bend test requirements for the other plates being used for the remedial work, because, this is a clear indication of brittle material and lack of toughness.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Alfred Hedefine

AH/pcs

CC: Mr. Tom Edwards

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OREGON STATE HIGHWAY DEPARTMENT

7276
Consult

September 12, 1972

Mr. Louis G. Silano
Project Engineer
Parsons, Brinckerhoff, Quade & Douglas, Inc.
111 John Street
New York, N. Y. 10038

NOTED
A. E. JOHNSON

Re: Fremont Bridge Repair
Contract #7276

Dear Mr. Silano:

This will confirm changes in test report data phoned to your secretary on September 6. Mr. Czyzewski questioned tensile values which he gave me over the phone on Friday afternoon, September 1, but he had not had the opportunity to check the reason for their being unusually high. Tuesday, September 5, he gave me the following revised data on his tests of Lukens Heat A0075-2:

	Before Heat Treating	After Heat Treating
Field Point, psi	69,000	68,300
Ultimate Strength, psi	97,700	95,500
Elongation, %	23	23
Reduction in area, %	47.2	64.0
Charpy V-Notch, Ft-lb @ 40F	7,9,7	14,18,21

(No change from previous)

Very truly yours,

GEORGE M. BALDWIN
Administrator of Highways

By

JOHN C. JENKINS
Engineer of Materials & Research

JCJ:sh

cc: Tom Edwards
A. E. Johnson
Walt Hart
Gary Tester
Ed Rief
Harry Czyzewski

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SEP 13 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

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SEP 1 1972
FOR FILE

7276

Tom Edwards

Salem, Oregon
September 5, 1972

Mr. Louis G. Silano
Project Engineer
Parsons, Brinckerhoff, Quade & Douglas, Inc.
111 John Street
New York, N. Y. 10038

Re: Fremont Bridge Repair
Contract 7276

Dear Mr. Silano:

The enclosed deals with the 2 3/4" pa plate crack and lamination which I discussed with you on Friday, September 1, 1972.

Picture No. 1 shows the location of the crack with respect to the body of the plate (Lukens Heat No. A 0075-2).

Picture No. 2 shows the location of the crack with respect to the location of the lamination.

Picture No. 3 shows a close up of the crack after some sampling had been performed on it. The first drilled hole was for material for a chemical analysis, the second drilled 1/2" hole was made to arrest the spread of the crack. The triangular piece at the edge of the crack was removed for metallographic tests. The area has been dyed.

p Picture No. 4 shows a close up of the lamination at the upper end of the 4-ft radius. The three indents in the 3 1/3 " area are from hardness determinations. The area has been dyed.

I learned Friday that all of the other pieces, with the exception of this one, had been preheated before having the edges flame softened. (I'm referring to the pa plates.) The preheat used on the other 2 3/4" plates is said to have been about 250 F. Also, there is reported to have been a nick in the edge of the plate. It is reported that the nick was about 1/4" in length, transverse to and in the center of the edge, and deep enough to catch your fingernail in. In talking with Howard Beede of American Bridge Friday, he indicated that he did not consider either the lack of preheat or the nick to be significant in the generation of the crack. Apparently Harry Morford of AB would like to consider them significant.

Tests were performed on samples of Heat A 0075-2 before and after heat treating at 1100 F for 2 hr at AB and for 3 hr at MEI, our metallurgical consultant in Portland. Samples for these tests came from opposite ends of the plate scrap between the pa plates (see sketch). The following results were obtained:

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NOTED
TOM EDWARDS

Lukens Heat A 0075-2 Before and After
Heat Treating

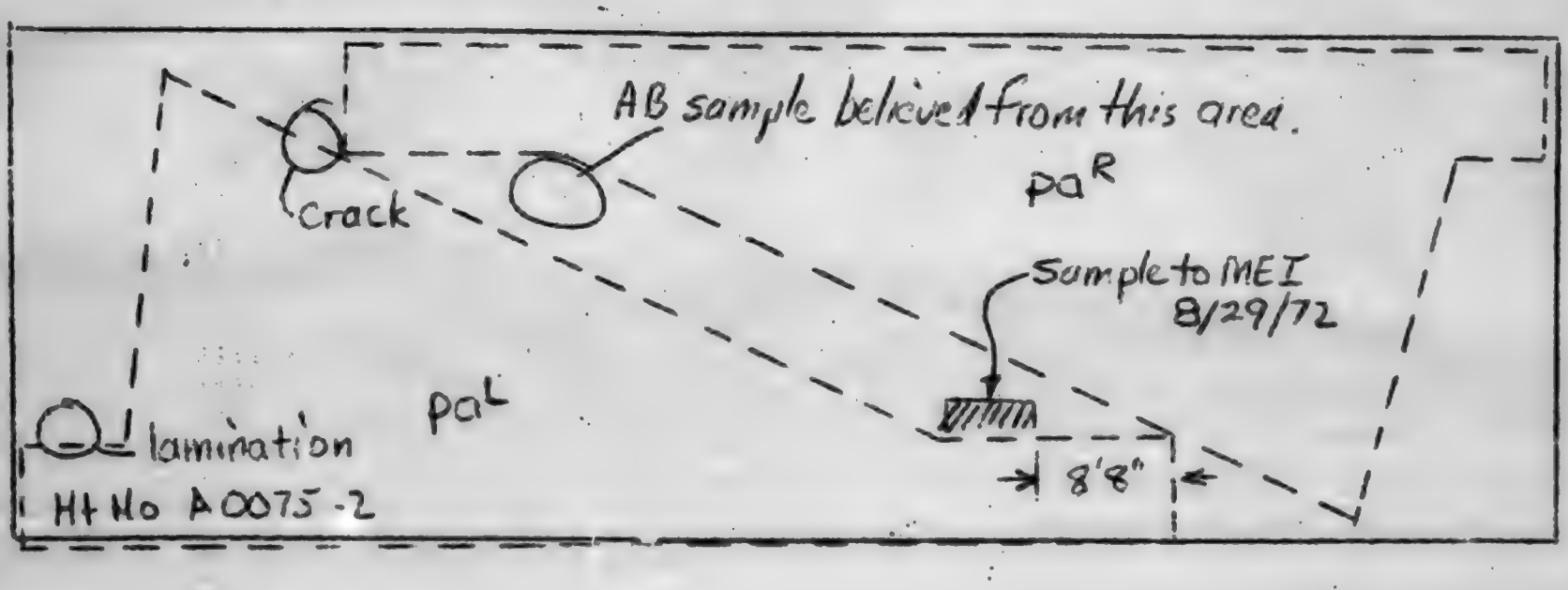
Mill Report	American Bridge		Meallurgical Engineers	
	Before	After	Before	After
YP 73,200 psi	65,160	62,370	84,415	81,700
Ult 96,600 psi	105,260	102,390	118,180	116,670
Elong 22%	24%	23%	23%	22%
Charpy				
40 F 20,21,10			7,9,7	14,18,21

In addition , Harry Czyzewski of MEI performed the burn bend test in the 1964 Standatd Specifi cations and the before heat treat specimen failed in brittle fracture at a deflection angle of 15°; the heat treated specimen broke in brittle fracture at a deflection angle of 30°. Neither of these edges had been flame softened.

If there is any other information you need in connection with this problem, please let us know. I might add, at this time all we have heard from Lukens is that their tests show that the plate meets the specifications of ASTM A588. We have let it be known that until Lukens comes up with a logical explanation for the crack which our metallurgical consultant will accept, the plate is rejected. At this point Mr. Czyzewski is not accepting the "no preheat, nick" explanation as satisfactory.

Very truly yours,

John C. Jenkins
Engineer of Materials & Research
Oregon State Highway Division



2045-A040

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SEP 5 1972

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
65 BROADWAY STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 232 117
ENGINEERS

FOR FILING
Consult.
7216

August 30, 1972

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge

NOTED
A. E JOHNSON

Gentlemen:

We are writing with reference to a telephone conversation with Mr. Bob Ellison of your office concerning the hardness of the $3\frac{1}{2}$"ø bolts for the main bearings at Pier 1W and 1E. It is our understanding that the bolts furnished have a measured Brinell Hardness of 363. The ASTM Specifications for A354 Grade BC bolts permit a range in Brinell Hardness of from 255 to 321.

We find this deviation from the specified range to be excessive and therefore the bolts as furnished are unacceptable.

For your information, please note that there is a past history concerning these bolts which involves remedial work proposed by Murphy Pacific to correct the misaligned grillages which were set incorrectly by the subcontractor. In an agreement reached between Murphy Pacific and the State of Oregon, Murphy Pacific proposed to drill the holes in the castings in situ and to correct for misalignment of the mating holes in the grillages by utilizing bolts of larger diameter. Consequently, the bolts are now detailed as 4" diameter bolts.

These bolts functioned as interference bolts with the diameter of the holes for the bolts drilled $4.000" \begin{smallmatrix}+.001\\-.000\end{smallmatrix}$ and the bolts themselves $4.001" \begin{smallmatrix}+.001\\-.000\end{smallmatrix}$". Therefore, it is not essential to torque these bolts to 70% of the minimum tensile strength. However, we would expect that these bolts will be torqued initially to a nominal value.

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SEP 1 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

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SEP 1 1972
BRIDGE DIVISION

NOTED
R. W. ELLISON

If we can be of further assistance, please feel free to contact this office.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G Silano

L.G. Silano
Project Engineer

LGS:mc

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SEP 1 1972
BRIDGE DIVISION

August 22, 1972

Mr. Kenneth L. Roberts
Souther, Spaulding, Kinsey,
  Williamson & Schnabe
Standard Plaza
Portland, OR 97204

Dear Ken:

I have your letter of August 16 concerning extra billing by your client, Parsons, Brinckerhoff, Quade & Douglas, which we have declined to pay under our interpretation of the design consultant contract and representations made by the consultant.

With respect to the sections removed from the bridge, the Highway Division has previously entered into a contract with Metallurgical Engineers, Inc. to save and protect the fractured pieces and to do further metallurgical work on the companion sections of the bridge.

Sincerely,

George H. Baldwin
Administrator of Highways

TE:ms fm

cc Tom Edwards
F. B. Klaboe
A. E. Johnson
W. J. Hart
L. I. Lindas
M. S. Coulter

copy:
TE
FBK

SOUTHER, SPAULDING, KINSEY, WILLIAMSON & SCHWABE
ATTORNEYS AT LAW
12TH FLOOR STANDARD PLAZA
PORTLAND, OREGON 97204
TELEPHONE 503-222-9981
CABLE ADDRESS: "ROSCAL"
ROBERT T. MAUTZ (1905-1968)

CALVIN N. SOUTHER
BRUCE SPAULDING
WILLIAM H. KINSEY
WAYNE A. WILLIAMSON
JOHN L. SCHWABE
GORDON MOORE
KENNETH E. ROBERTS
FORREST W. SIMMONS
JAMES B. O'HANLON
DOUGLAS M. THOMPSON
JAMES R. MOORE
A. ALLAN FRANZKE
ROLAND F. BANKS, JR.
GINO G. PIERETTI, JR.
DOUGLAS J. WHITE, JR.
JOHN B. SOUTHER
ROCKNE GILL
JAMES A. LARPENTEUR, JR.

JAMES F. SPIEKERMAN
ROBERT G. SIMPSON
RIDGWAY K. FOLEY, JR.
THOMAS M. TRIPLETT
ROBERT E. JOSEPH, JR.
STEPHEN B. HILL
PAUL N. DAIGLE
ROBERT T. HUSTON
KENNETH D. RENNER
KENNETH E. ROBERTS, JR.
ANDREW F. FINK
DONALD JOE WILLIS
J. LAURENCE CABLE
GREGORY W. BYRNE
MICHAEL D. HOFFMAN

EDWIN D. HICKS
COUNSEL

August 18, 1972

Mr. George M. Baldwin
Administrator of Highways
Oregon State Highway Division
Highway Building
Salem, Oregon 97310

Re: Fremont Bridge - Willamette River
Portland, Oregon
D/Loss - 11/19/71
Our File I-12942

Dear George:

Your letter of August 7, 1972 signed by Tom Edwards and addressed to Parsons, Brinckerhoff, Quade & Douglas, Inc. of New York City has been referred to me by that firm for answer and attention.

My client Parsons, Brinckerhoff, Quade & Douglas, Inc. most emphatically rejectsthe contention that the extra work covered by its billing was for "correction of design error". It, therefore, requests that its bill be paid immediately.

I have viewed my client's report dated June 23, 1972 and forwarded to Mr. Tom Edwards by letter dated June 23, 1972 and this report and other reports clearly establish that my client's work was performed in accordance with accepted engineering standards and practices.

I note from the "Oregonian", dated the 18th of August, 1972, that Panel Point No. 3 has been removed from the bridge structure and I would suggest and request that it be stored for future inspection and perhaps testing. I would also request that I be advised of the disposition of the other panels which I understand may not be used in the bridge structure.

Sincerely yours,

Noted
Gary L. Ross

KENNETH E. ROBERTS

KER:das

cc: Mr. Alfred Hedefine

RECEIVED
AUG 21 1972
OFFICE OF
ADMINISTRATOR OF HIGHWAYS

RECEIVED
AUG 8 - 1972
FOR FILING

7276
Consult

August 7, 1972

Parsons, Brinckerhoff, Quade
and Douglas, Inc.
111 John Street
New York, N.Y. 10038

Attention Mr. Louis G. Silano
Project Engineer

Gentlemen:

Re: Fremont Bridge

Your July 19 letter enclosed your invoice for engineering services in conjunction with Panel Point 3, covering the period from April 1 through June 23, 1972.

Our agreement dated September 21, 1966 to which you refer contains in the consultant's proposal, which is part of the agreement, the provision that "...the cost of interpreting contract plans and specifications and design and detailing work necessary to correct errors in our plans will be borne by us..."

We consider the extra work covered by your billing to be correction of design error and the extent of your liability has not been determined at this time. We are, therefore, withholding payment of the invoice submitted by you.

Very truly yours,

George M. Baldwin
Administrator of Highways

By

Tom Edwards
State Highway Engineer

bc George M. Baldwin
F. B. Klaboe
A. E. Johnson
Walter J. Hart
H. S. Coulter
R. O. Cunningham

AEJ:ja ms
(Original letter and billing in Johnson's office)

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 232 117

2045-X102

ENGINEERS

July 19, 1972

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge

Dear Sir:

We are enclosing our bill for engineering services, authorized as extra work in conjunction with Panel Point 3, under the reimbursement terms of our Agreement, dated September 21, 1966 and as amended in our Supplemental Agreement.

This invoice covers the period from April 1, 1972 through June 23, 1972.

Your attention to this matter will be appreciated.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano

L. G. Silano
Project Engineer

LGS/nw

Encs.

RECEIVED
JUL 21 1972
BRIDGE DIVISION

No. 20943

State of Oregon
State Highway Department
Salem, Oregon 97310

TO

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

111 JOHN STREET, NEW YORK, N.Y. 10038

July 7, 1972

For Engineering Services approved as extra work in connection with the Design of the Fremont Bridge Interstate 405 over the Wellamette River under the Reimbursement Terms of our agreement dated September 17, 1966.

Direct Payroll	$ 8,973.91
24% Payroll	2,153.74
100% Payroll	8,973.91
	$ 20,101.56
Travel Expenses	826.04
Out of Pocket Expenses	3,043.95
Amount Due This Invoice	$ 23,971.55
Amount Due Invoice #20390, 20526, 20576, 20689, 20726 & 20806	38,781.21
Amount Due To Date	$ 62,752.76

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2045-X102

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
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ENGINEERS

7276
Consult.

July 14, 1972

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Panel Point 3

RECEIVED
JUL 18 1972
OFFICE OF
A. E. JOHNSON
ASSISTANT STATE HIGHWAY ENGINEER

Dear Mr. Hart:

In our telephone conversation of July 13, 1972, we discussed several items relating to both details and inspection involved with the modification work at Panel Point 3. We would like to take this opportunity to summarize these items as follows:

1. Our response to the question raised by Howard, Needles, Tammen & Bergendoff on the fillet welds connecting the bottom flange of the girder and the top flange of the arch-rib has been forwarded to you in our letter of July 13, 1972.

2. The longitudinal butt weld for the 2-3/4" web plate to the 1" web plate should be ground as shown on the drawings. The Addenda, Revision Letter No. 1, dated May 19, 1969 of the Special Provisions, requires that grinding shall be in the direction of applied stress and shall be finished to a maximum surface roughness of ASA 125. For this weld it is expected that the grinding will be in the vertical direction.

3. In connection with finish requirements in our letter, dated June 23, 1972, we recommended grinding the 4 foot radius section of the girder web to a minimum surface roughness of 500. We have reconsidered this criteria,

NOTED
A. E. JOHNSON

NOTED
JOM EDWARDS

JUL 17 1972

and in view of the Addenda mentioned in Item (2) above, and because of the stress considerations within this curved area we deem it advisable to attain a surface with a maximum surface roughness of ASA 125. As before, this grinding should be accomplished in the circumferential direction.

4. With regard to the question of fillet weld returns, as it would apply to the modification details at Panel Point 3, please be advised that there are two locations where this could be considered. They both involve the terminal (forked) ends of the bottom flange of the girder and the top flange of the arch-rib within the 2-3/4 inch web plates. This return should be twice the weld size.

5. Note 4 on Sheet 16 of the Contract Drawings requires that...

> "The Contractor shall verify by means of certified tests that the plates in the vicinity of tension butt welds and where indicated on plans, are free from laminations, contaminations or any other defects which would be detrimental to transfer of tensile stress."

We expect that this would apply to the horizontal butt weld between the 2-3/4 inch web plate and the 1 inch web plate. Also, with respect to our discussion concerning the distance from the butt weld to be tested, we believe that this should not be related to material thickness but rather a distance of about one foot either side of the weld should be explored. We would not want to tolerate material anywhere on the structure having laminations or other material defects, but in the vicinity of welded tension butt joints it could have serious consequences.

6. We also recommend that the fabricator be required to submit drawings outlining the assembling and welding procedures for the work involved with modified Panel Point 3.

We expect that you will advise the Contractor of these requirements and that you will take the necessary steps to see that they are carried out. If we can be of further service, please advise.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L. G. Silano
Project Engineer

LGS/mw

cc: T. Edwards
A. Hedefine

2045-A040

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PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
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ENGINEERS

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JUN 29 1972

7276

Consult

June 28, 1972

Mr. Walter J. Hart, Bridge Engineer
Oregon State Highway Division
Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Repair to Arch Rib at P.P. 10W

Dear Mr. Hart:

The enclosed sepia of drawing SK-9 "Repairs to Laminated Area, North Arch Rib P.P. 9-P.P. 10" has been prepared in answer to your letter of May 10, 1972 and the letter of Mr. R.O. Cunningham May 18, 1972. This proposed repair scheme will sandwich the laminated areas with 1" A514 plates on both sides of the bottom flange of the arch rib. We have detailed the interior sandwich plates so that they can be entered into the arch rib through the manhole in the arch rib adjacent to Panel Point 10. As mentioned in Note #5 on drawing SK-9, this work should be completed prior to erecting the center span.

If we can be of any further assistance, please do not hesitate to contact us.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L. G. Silano WJH

L.G. Silano
Project Engineer

NOTED
A. E. JOHNSON

LGS:mc
Enc.
cc: T. Edwards
A.E. Johnson
R.O. Cunningham w 1 print

RECEIVED
JUN 30 1972
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUN 30 1972
FOR FILING

Form FHWA-121 (1)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

TO : Mr. George M. Baldwin, Administrator of Highways
Salem, Oregon

DATE: June 26, 1972

In reply refer to: 10-35-FA

7270

FROM : G. L. Green, Acting Division Engineer
Salem, Oregon

Council

Also in 12-14 Consult.

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Superstructure
Time Extension on HNT&B Consultant Agreement

This is written confirmation of our June 19 verbal approval of the 170-day extension of the consultant agreement with Howard, Needles, Tammen & Bergendoff for an erection procedure check and design review on the subject project.

6-29-72
Al - Hart

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

GPO 917-344

Gen. Dill 5

2045-X102

RECEIVED
JUL 11 1972

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

7276
Consult.

June 23, 1972

cy Consult: Cunningham 6-29-72

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Details of Panel Point 3

Dear Sir:

With reference to your telephone inquiry of June 23, 1972, please be advised that the deflections you requested are as follows:

@ Panel Point 3

due to Δt= +68°F — x= -4 1/4"
y= -3 3/8"

due to Δt= -62°F — x= +3 7/8"
y= +3 1/16"

where +x= →
+y= ↑

@ Panel Point 24 (Girder)

due to Δt= +68°F — x= 0
y= +4 3/8"

due to Δt= -62°F — x= 0
y= -4"

NOTED
TOM EDWARDS

@ Panel Point 24 (Arch)

due to Δt= +68°F — x= 0
y= +5 1/4"

due to Δt= -62°F — x= 0
y= -4 3/4"

NOTED
A. E. JOHNSON

NOTED TOM EDWARDS

Summarizing, the total vertical movement of the girder at Panel Point 3 is 6 7/16 inches and for the girder at Panel Point 24 is 8 3/8 inches. The total vertical movement for the arch rib at Panel Point 24 is 10 inches.

With reference to your question on the maximum extreme fiber stress in the 4 foot curved radius of the modified girder-web at Panel Point 3, we cannot agree that it is valid to extrapolate the plot of the absolute maximum principal stresses to produce an extreme fiber stress. As explained in previous correspondence, we believe the stresses determined in the 2 3/4" web at the 4' radius are accurate as well as conservative. Due to the web and flange loading used in our finite element analysis they represent an upper bound solution. Further, our analysis has neglected the gradual distribution of the applied load into the girder web through the bolted splice plates.

The effect of this distribution by means of bolted splice plates would be to decrease the principal stresses. Thus the analysis and stresses sent to you with our letter of June 5, 1972, constitute a very reasonable solution and an acceptable level of maximum principal stress in the 2 3/4" web.

With regard to the flame cutting of the existing web of the girder sections at Panel Point 3, we suggest the following requirements: 1) The flame cutting should conform to the Oregon Standard Specifications, 210-3.23 Flame Cutting. 2) The cut surface should be ground along the axis of the web to a minimum A.S.A. surface roughness of 500. 3) All defects in the cut edge should be repaired and ground smooth per Items 1 & 2.

It is also recommended that the 4 foot radius section of the new girder section at Panel Point 3 be ground in the circumferential direction to a minimum A.S.A. surface roughness of 500.

With respect to your question about the temperature stresses, we offer the following comments:

1. For the case of maximum tensile stress at the bottom flange of the girder, the differential temperature rise of 68°F produces a positive moment of 23,244 ft. kips

and an axial force of 733 kips. From these forces we compute extreme fiber tensile stress as 4.05 ksi in the bottom flange of the girder at the vertical splice to the right of Panel Point 3.

2. For the case of maximum compression stress in the bottom flange of the girder, the differential temperature fall of 62°F produces a negative moment of 23,500 ft. kips and a zero axial force. From these forces we compute the extreme fiber stress as 5.05 ksi compression in the bottom flange of the girder at the vertical splice to the left of Panel Point 3. These stresses, due to temperature, amount to increases of 18.6% for temperature rise and 21.0% increase for temperature fall. Both of these increases are less than the 25% permitted in the AASHO Specifications.

Therefore, the controlling loading condition is DL+LL+I @ 100% basic and not DL+LL+I+ Temperature @ 125% basic.

It is quite possible that you may have overlooked the effect of axial forces when you compared the temperature stresses with those of DL+LL+Impact stresses.

If we can be of further service please do not hesitate to contact this office.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L.G. Silano

LGS:mc

cc: Mr. Tom Edwards

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JUN 26 1972
OFFICE OF
STATE HIGHWAY ENGINEER

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JUN 11 1972

Gen. Liu

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAR NEW YORK • TELEX WU 1-2403 • RCA 222 117
ENGINEERS

7296
Consult.

June 23, 1972

cy Eville
cy Cunningham
(ltr only)
6-26-72

Mr. Tom Edwards
State Highway Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Panel Point No. 3

Dear Mr. Edwards:

At your request and authorization, we proceeded to perform an investigation concerning the cause of the brittle crack failure on October 28, 1971, of the juncture piece at Panel Point No. 3 in the south tie girder of the west side span. We are enclosing herewith the report of our work "Report on Analytical Studies and Review of Metallurgical Investigations" dated June 23, 1972.

The juncture piece that cracked is one of four such pieces. The companion juncture piece in the north tie-girder of the west side span that was erected has not failed, cracked, or shown any distress in spite of being subjected to an increased loading at the time the south juncture piece cracked. The pair of juncture pieces for the east side span have been fabricated but never erected.

6-26-72
Orig to Burgett

In the juncture piece that had the brittle crack failure, your metallurgist has determined that the material contained serious defects of inclusions and laminar type cracks not only at the fracture, but also elsewhere. Our own observors, Messrs. Silano and Abrahams, who were in Portland at the site on the day after the cracking took place, reported several locations on the west fracture face where large inclusions were clearly evident. This observation was confirmed by the OSHD welding engineer who accompanied these gentlemen. Also in the MEI Report II, the presence of a crack in the unfused portion of the weld between the juncture piece and the arch rib top flange was reported. We are at a loss as to why this was not detected during shop inspection.

NOTED
A. E. JOHNSON

We question whether an incipient crack or cracks existed in the curved fillet area and remained undetected.

From our investigations, we find no stresses that are not within the design allowables for the juncture piece and the tie girder at Panel Point No. 3. As stated in the Report, the investigations indicate causes of the crack failure in the juncture piece to be the results of defective material furnished and with the procedures employed during its fabrication and assembly.

Very truly yours,

Alfred Hedefine

Alfred Hedefine

AH/pcs

7276

Contract

June 21, 1972

Howard, Needles, Tammen & Bergendoff
1805 Grand Avenue
Kansas City, Missouri 64108

Attention: Mr. Robert G. Crabtree

Gentlemen:

Time Extension for Consultant Agreement
Fremont Bridge Superstructure
Contract 7276

The State Highway Division has granted your request for a 170-calendar-day extension of time for your work in conjunction with the erection procedure check and design review on the Fremont Bridge.

Your latest invoice will now be processed and forwarded to the Accounting Section for payment.

Very truly yours,

George H. Baldwin
Administrator of Highways

By

Tom Edwards
State Highway Engineer

bc: Federal Highway Administration
bbc: Floyd Query
F. B. Klaboe
A. E. Johnson
L. H. Young
C. T. Keasey
W. J. Hart
H. S. Coulter
V. E. Skoog
John Howard
RJW:DH cg

7276
Consult.

June 15, 1972

TO Mr. Glen L. Green
Acting Division Engineer
Federal Highway Administration

bc George M. Baldwin
Tom Edwards
F. B. Klaboe
Walt Hart
V. E. Skoog
H. S. Coulter
R. O. Cunningham

FROM A. L. Johnson
Assistant State Highway Engineer

SUBJECT Consultant Agreement with HNTB
Fremont Bridge Superstructure
FAP I-405-8(17)303
Contract 7276
Your File 10-35-FA

Yellow copy filed

The consultant agreement with Howard, Needles, Tammen & Bergendoff, dated November 9, 1971, for an erection procedure check and design review on the subject project has overrun the allotted time of 150 calendar days. Part of the necessary work under this agreement is to review the corrective measures proposed by others and it is this item that will require more time.

The finite element analysis of the modified Panel Point 3 details, made by the firm of Parsons, Brinckerhoff, Quade & Douglas, will be reviewed by Howard, Needles, Tammen & Bergendoff and it is estimated that it will require an additional 170 calendar days to complete the work. The revised completion date will be September 25, 1972.

May we have your concurrence in granting a time extension of 170 days under the terms of the agreement. Present estimates indicate that no additional fees will be required.

In order to place this time extension on the current month's Commission agenda, please telephone your decision to the Bridge Section at your earliest convenience.

RJW:dh ja

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OREGON STATE HIGHWAY DIVISION

7276

HIGHWAY BUILDING • SALEM, OREGON • 97310

June 5, 1972

Parsons, Brinckerhoff, Quade & Douglas
111 John Street
New York, New York 10038

Gentlemen:

Fremont Bridge
West Side Span Revisions

Reference is to your letter of May 22, 1972, regarding erection drawings numbers 720501-5 and 720501-6.

The temporary strut member at P.P.4 appears to have the capacity to handle the load condition indicated; however, the bearing on the pins needs further investigation.

The adjustable tie at P.P.0 in general seems feasible. However, we are concerned about the load effects on the portal frames of both the approach span and Fremont span. The position of the jacks on the unsupported webs needs further study for local stresses.

Very truly yours,

George M. Baldwin
Administrator of Highways
By
ORIGINAL SIGNED
R.W. ELLISON
R. W. Ellison
Bridge Administration Engineer

JEB:dh

cc Tom Edwards
A. E. Johnson
H. S. Coulter
L. L. Wallace
J. H. Wood

NOTED
A. E. JOHNSON

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JUN 6 1972
OFFICE OF
STATE HIGHWAY ENGINEER

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MAY 19 1972
FOR PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC

111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

7276
Consult

May 16, 1972

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Dear Sir:

We have reviewed the correspondence and ultrasonic testing reports concerning the laminated plate in arch section 117 ARIR of the Fremont Bridge and have the following suggestion to offer:

1. These areas should not be left untreated.

2. The laminated areas should be stitch bolted.

3. In view of the fact that rusting has appeared on the surface, precipitating this investigation, it is conceivable that the lamination has progressed to the surface, in which case we would recommend the use of splice plates with stitch bolts.

4. The location of all the laminated areas designated as 1, 2, and 3 should be defined with respect to each other and to the existing gussets, panel points, etc. This is not clearly shown on the enclosed sketch and this information will be necessary in order to arrive at a solution for Area 3. Since remaining Areas 1 and 2 are in close proximity, a solution for Area 3 may encompass Areas 1 and 2 also.

If you will provide the information requested in Item 3, we will be glad to furnish you with a suggested detail.

NOTED
TOM EDWARDS

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L. G. Silano
Project Engineer

LGS/nw
cc: T. Edwards
A. E. Johnson
R. O. Cunningham

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MAY 18 1972
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STATE HIGHWAY ENGINEER

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PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
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2276
Consult.

May 12, 1972

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Details at Panel Point 3

Dear Mr. Hart:

We are enclosing herewith one (1) print of our drawing, "Details at Panel Point 3." This drawing has been revised to accommodate the modifications which were discussed with you in our recent telephone conversation. This modification involves the web splices of the girder section to the right and left of Panel Point 3.

To eliminate any problem with amplification of stresses in the webs, due to the web thickness transitioning from 1" to 2-3/4" (outside the limits of the splice plates), we elected to extend the 2-3/4" web plate full thickness to the centerline of the splice. This necessitated modifying the web splices as shown on the drawing. The details have been arranged to utilize the existing splice plates to the maximum extent possible.

We were primarily concerned with the girder web to the right of Panel Point 3 where there are also stress amplifications due to the vertical four (4) foot curvature where the web joins the archrib, and we deemed it advisable to carry this same modification to the left splice where there are also some sizable stresses.

We are studying the results of the finite element runs and at this time we can say that the stresses are within the allowables for all the parameters and loading conditions analyzed.

NOTED
TOM EDWARDS

NOTED
A. E. JOHNSON

We would, however, like to call your attention to one location within the four (4) foot radius at approximately 45° from the vertical wherein the principle stress was computed at 29.7 ksi for the worst loading condition. We believe this slight overstress is not critical in view of the fact that our design assumptions are conservative and the fact that it is a principal stress representing a combination of stresses. Also, our analysis is predicated on full stresses being applied at the centerline of the splice where in reality the stresses are brought in through lines of bolts which bring the load in gradually. The full load is not transmitted into the web and flanges until it is well beyond the four (4) foot curved area.

We expect to transmit to you shortly the results of the finite element analysis including a summary of the resulting stresses. The drawings are complete and have been finalized in accordance with the finite element results. Should you have any questions, please feel free to contact us.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L. G. Silano
Project Engineer

LGS/rw

Encl.

cc: T. Edwards/ with enc.
A. E. Johnson/ with enc.
R. Crabtree/with enc.
R. O. Cunningham /with enc.

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MAY 16 1972
OFFICE OF
STATE HIGHWAY ENGINEER

28'-0¼"

TOP FLANGE PL 2"×66" (EXIST.)

WEB PL'S 1"×140" (EXIST.

EXIST. SPLICE
MODIFY AS SHOWN

EXIST. STIFF. PL AT
GIRDER SPLICE

E

F

F

E

2'-1"

2-9/16" A-588
SPL. PLS & 1-
1⅞" A-588 FILL PLATE

G

G

WALKW
DETA
SECT.

C

C

BOT. FLANGE
2¾"×66" A-588

A

5'-0"

P.C.

R=44'-2¾"

P.T.

NEW SPLICE PLS REQ'D. SIMILAR TO
EXIST. SPLICE. PROVIDE ¼" A-588
FILL AND REVISE BOLT
LAYOUT TO CLEAR WEBS.

F

E

K

F

③

44'-10"

0¼"

16'-9¾"

5% SLOPE

G3

EXIST.)

2 SPLICE PL's
½" x 17½"; SEE
SH. NO. 34

G

H

J

E'

2'-1"

WALKWAY, FOR
DETAILS SEE
SECTION A-A

WEB PL's 1" x 50"
A-588

2-½" A
SPL. PL
2¼" A-

WEB PL's 2¾" A-588

A3

B

2"

1'-11"

E'

L 3×3×5/16 BRACING
SEE SHEET NO. 33

MEASURED HORIZONTALLY ALONG
WORK LINE OF GIRDER

℄ 1/2" + 8" (TYP.)

NOTE: DIAPHRAGM DETAILS
TO SECTION G-G

SECTI

SECTION E

3/8

WORK LINE OF GIRDER

3'-5" — 2"

EXIST. STIFF. ℄ AT GIRDER SPLICE

EXIST. SPLICE MODIFY AS SHOWN

8'-3"

MEASURED NORMAL TO GIRDER

4'-2"

2'-0"

3/4"

2-1/2" A-588 SPL. ℜS & 1 2'4" A-588 FILL

C C

A

R=4'-0"

3/8"

4'-0 3/4"

CLOSURE PLATE

1'-6" ℄ SPLICE TYP.

TYP.

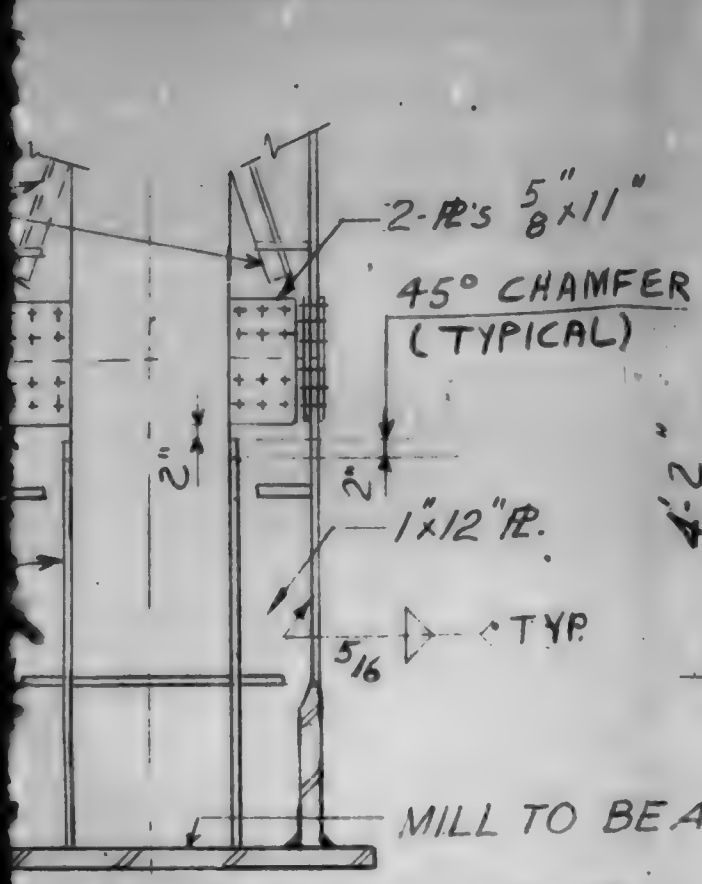
6" (TYP.)

(M.P. 100%) TYP 1/2

(M.P. 100%) TYP 1/2

2'-1

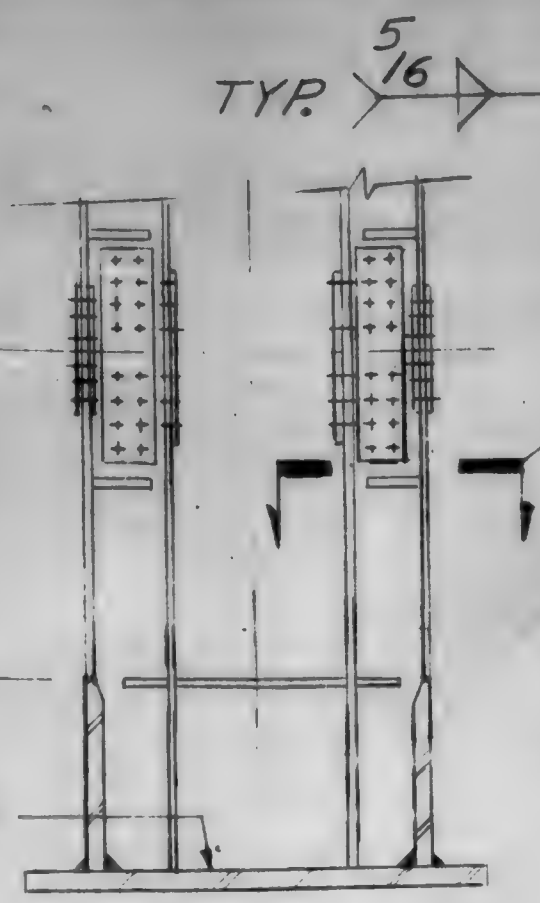
2 SPLICE ℜ'S 1/8" × 40" A514 (TYP.)
1 FILL ℜ. 1/2" × 40" A514 TOP SECT



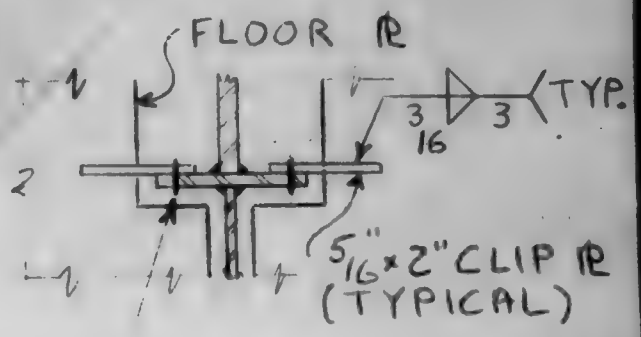
AILS NOT SHOWN SIMILAR
G-G.

CTION E-E

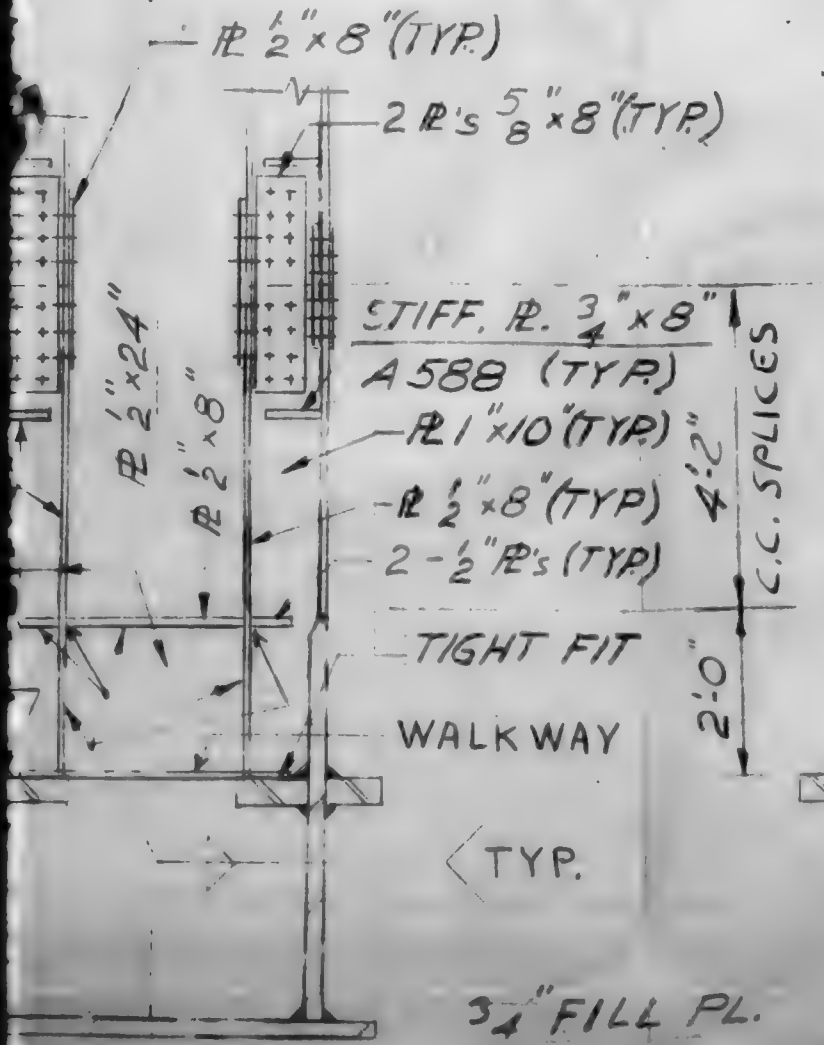
ON E-E' SIMILAR
3/8"=1'-0"



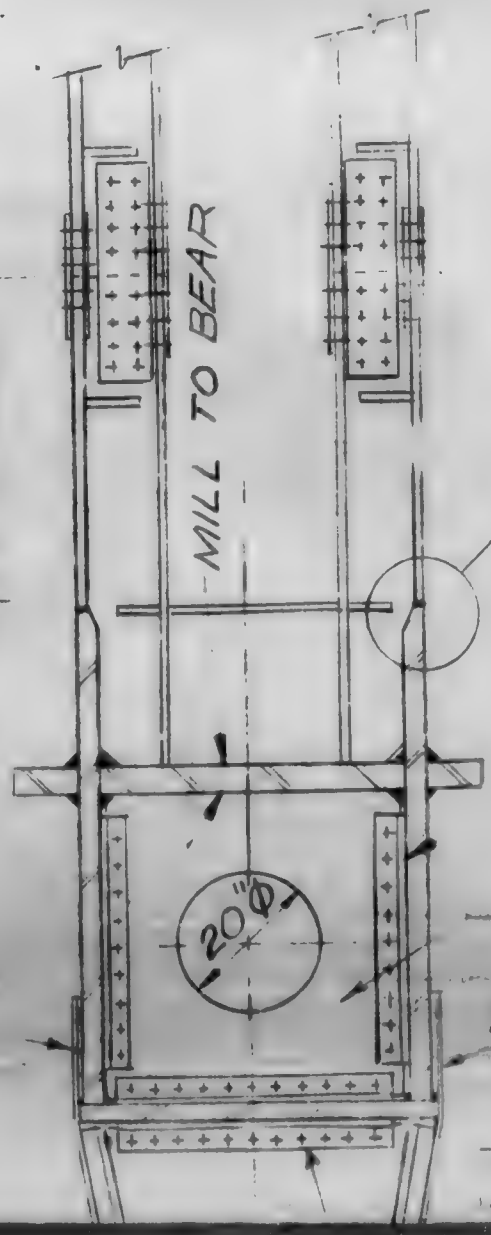
SECTION F-F
3/8"=1'-0"

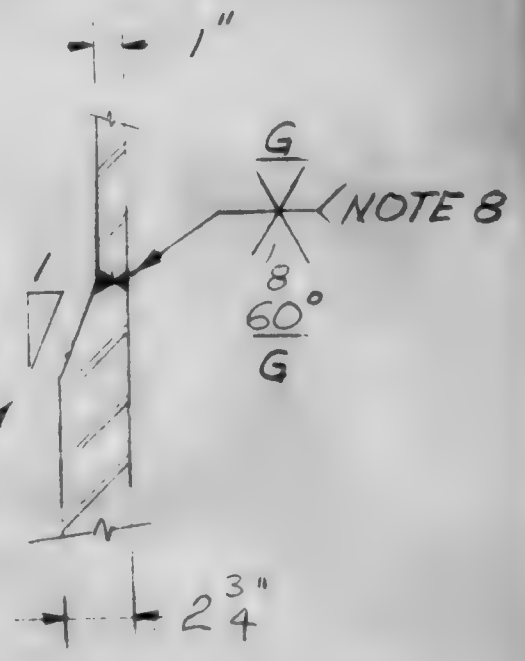


DETAIL 1
1"=1'-0"



CTION G-G





PROVIDE 2 NEW Ls 4×4×3/8
TO PERMIT REVISION

NEW SPLICE PLS REQ'D. SIMILAR TO EXIST. SPLICE. PROVIDE 1/4" A-588 FILL AND REVISE BOLT LAYOUT TO CLEAR WEBS.

P.C. R: 44'-2 3/4"

P.T.

F

E

K

5/16

FILL PL

3 3/4"

2 3/4"

L K

1/2" SECT. C

1/2" SECT. C'

SECTION C-C

SECTION C'-C' SIMILAR

1/2" = 1'-0"

L 3 1/2 x 3 1/2 x 3/8" (TOP & BOT. OF 3/8" PL)

℄ SPLICE

4"

5'-6"

5'-0"

1

R=7 1/2"

1/2 TYP.

2 1/4" x 45" A-588 PL

SECTION B-B

3/8" = 1'-0"

R=12'-0"

③

2'-6"

5'-6"

3 3/4"

8"

1'-10 1/4"

2 3/4"

EXIST. L 4 x 4 x 3/8

2'-1"

3"

4"

1 1/4"

3"

FOR LADDER DETAILS SEE SHOP DWG. NO. K3513-102CD

1'-6"

1"

MANHOLE COVER

EXIST. M.H. COVER

SECTION D-D

3/8" = 1'-0"

MADE BY M. ABRAHAMS

CHECKED BY S. Mager IN CHARGE OF S. Mager

A3

B

F

D

G

D

J

H

11'-8 7/16"

1'-11"

1'-11"

2'-4"

8'-11 1/8" (HORIZONTAL)

1/2" ⌀ THREADED STUD 6" o/c

3/8" PLATE

13'-8 1/4"

℄ RELOCATED ARCH SPLICE

℄ ARCH

DETAIL AT PANEL POINT 3

3/8" = 1'-0"

OUTLINE OF WALKWAY
5/16" FLOOR PLATE - CLIP
TO STIFFENER FLANGES
(3) (SEE DETAIL '1')

℄ STIFFENER

3/4"

3"

3'-6"

5'-6"

1'-3 1/16"

FLANGE

FL

2"

2"

3/16

1"

1/4 x 3" STIFF. PL

SYMMETRICAL
ABOUT ℄ GIRDER

R = 7 1/2"

4'-2"

COVER IN WALKWAY - REUSE
COVER AT ARCH MANHOLE

SECTION A-A

3/8" = 1'-0"

E

R: 4'-0"

$\frac{3}{8}$" CLOSURE PLATE

4'-0 $\frac{3}{4}$"

B

ARCH WORK LINE

A

$\frac{3}{4}$"

2 SPLICE PL'S 1/8" x 40" A5
1 FILL PL. 1/2" x 40" A514
1 FILL PL 1" x 40" A514

4'-0"

1'-11"

1'-11"

3'-10"

1 SPLICE PL. 1/8" x 41" I.S. A514 (EXIST.)
1 SPLICE PL 1/8" x 42" O.S. A514 (EXIST.)
1 FILL PL. 1" x 42" O.S. A514
TYPICAL

1" x 12" ST
PL (TRIM
TO SUIT

$1\frac{3}{4}$" FILL PLATE FOR EXISTING MANHOLE. MODIFY EXISTING DETAIL AS SHOWN.

FLANGE PL. $3\frac{1}{4}$" x 8" A-588 (TYP.)

SPL. PL $2\frac{3}{8}$" x 7" A-588 N.S. AND F.S.

FLANGE PL $3\frac{1}{4}$ x $44\frac{1}{2}$ A-588

SPL. PL 46 x $2\frac{3}{8}$" A-588 N.S.
SPL. PL 46 x $2\frac{3}{8}$" A-588 F.S.

SPLICE BOLTING SIMILAR TO SHOP DWG. K3513-206 AD

4'-2"

2'-0"

20"Ø

CUT 1 1/2" x 1 1/2" TYP. BOT. PL.

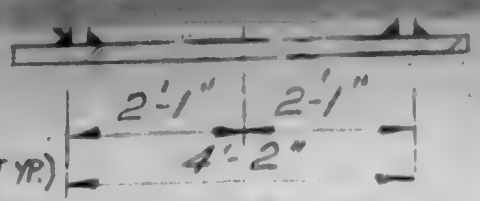
$\frac{3}{4}$

4'-2"

$\frac{3}{4}$

SECTION J-J

$\frac{3}{8}$" = 1'-0"

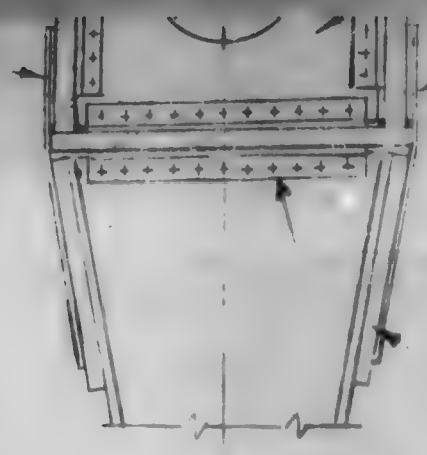


0" A514 (TYP.)
A514 TOP
A514 BOT.

SECTION G-G
3/8" = 1'-0"

NOTE: DETAILS SHOWN ARE SIMILAR FOR SECTIONS F-F, H-H, AND J-J.

3/4 FILL PL. (TYP.)

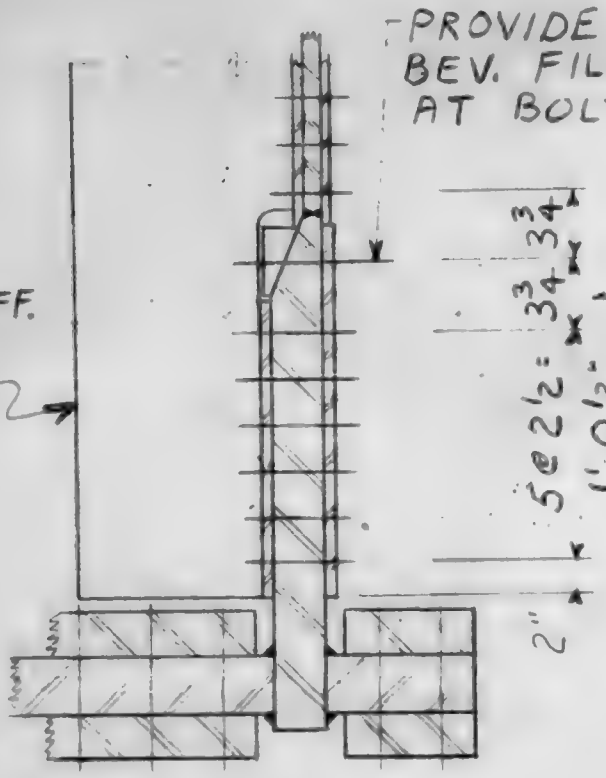


EXIST. 1/2" GUSS
PLATE (TYP.)

PROVIDE 2 NEW
TO PERMIT REV
OF CONNECT

1 3/4" FILL PL

SECTION H-H
3/8" = 1'-0"



" x 12" STIFF.
2 (TRIM
SUIT)

SECTION K K
1" = 1'-0"

MILL TO BEAR

1/2" PLATE

MILL TO BEAR

3/4

J-J

NOTES:

1. FOR GENERAL NOTES SEE SHEET 3.
2. FOR DETAILS NOT SHOWN SEE SHEET
3. ALL STEEL ASTM-A36 UNLESS NOTED.
4. ALL FIELD CONNECTIONS SHOWN ON SHEET ARE TO BE 1" Ø A-325 UNLES
5. ALL FILLET WELDS 5/16" UNLESS NOT
6. FOR STRUCTURAL STEEL NOTES SEE S
7. FOR GIRDER FRAMING SEE SHEE
8. RADIOGRAPHIC INSPECTION IS REQU FOR 100% OF THE INDICATED WEB LONGITUDINAL BUTT WELD
9. WELD QUALITY FOR ALL GIRDER WE WELDS SHALL BE AS REQUIRED FO WELDS IN TENSION FLANGES.
10. (M.P. 100%) DENOTES 100% MAGNETIC INSPECTION. BALANCE OF FILLET WE HAVE AT LEAST 10% MAGNETIC PARTI INSPECTION.
11. PROVIDE LOCK NUTS & WASHERS FOR & THREADED STUDS.

APPROVED:

BRIDGE ENGINEER

ASST. STATE HIGHWAY ENGINEER

STATE HIGHWAY ENGINEER

DESIGNED | CHECKED

DRAWN | CALC. BOOK

OREGON STATE HIGHWAY DEPART
BRIDGE DIVISION

FREMONT BRIDGE
STADIUM FREEWAY
MULTNOMAH COUNTY

DETAILS OF PANEL POIN

DATE | BRIDGE NO. 2529 | SHEET

ACCOMPANIED BY DWGS.

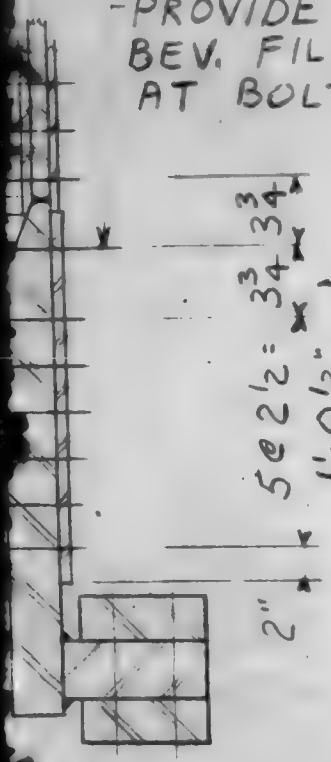
DRAWING NO.

2-1"

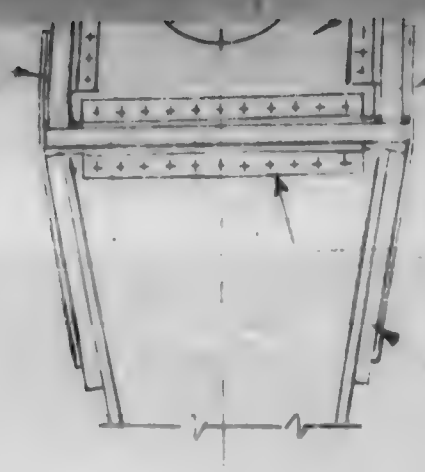
N G-G
:0"

SHOWN ARE
SECTIONS
ND J-J.

-PROVIDE
BEV. FILL
AT BOLT



N K K
'-0"



SECTION H-H
⅜"=1'-0"

NOTES:

1. FOR GENERAL NOTES SEE SHEET 3.
2. FOR DETAILS NOT SHOWN SEE SHEET 15.
3. ALL STEEL ASTM-A36 UNLESS NOTED.
4. ALL FIELD CONNECTIONS SHOWN ON THIS SHEET ARE TO BE 1"Ø A-325 UNLESS NOTED.
5. ALL FILLET WELDS 5/16" UNLESS NOTED.
6. FOR STRUCTURAL STEEL NOTES SEE SHEET 16.
7. FOR GIRDER FRAMING SEE SHEETS 31 & 32.
8. RADIOGRAPHIC INSPECTION IS REQUIRED FOR 100% OF THE INDICATED GIRDER WEB LONGITUDINAL BUTT WELD.
9. WELD QUALITY FOR ALL GIRDER WEB BUTT WELDS SHALL BE AS REQUIRED FOR BUTT WELDS IN TENSION FLANGES.
10. (M.P. 100%) DENOTES 100% MAGNETIC PARTICLE INSPECTION. BALANCE OF FILLET WELDS TO HAVE AT LEAST 10% MAGNETIC PARTICLE INSPECTION.
11. PROVIDE LOCK NUTS & WASHERS FOR ½" Ø BOLTS & THREADED STUDS.

MAY 1 2 1972

OVED:

GE ENGINEER

T. STATE HIGHWAY ENGINEER

TE HIGHWAY ENGINEER

GNED..... CHECKED.....

WN..... CALC. BOOK.....

OREGON STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

FREMONT BRIDGE
STADIUM FREEWAY
MULTNOMAH COUNTY

DETAILS OF PANEL POINT 3

DATE..... BRIDGE NO. 2529

ACCOMPANIED BY DWGS.....

SHEET 1 OF 1

DRAWING NO.....

RECEIVED
MAY 10 1972
FOR FILING

Gen. Files

OREGON STATE HIGHWAY DIVISION

7276

HIGHWAY BUILDING • SALEM, OREGON • 97310

May 9, 1972

Parsons, Brinckerhoff, Quade & Douglas
111 John St.
New York City, New York 10038

Attention: Mr. Louis G. Silano

NOTED
A. E. JOHNSON

Dear Mr. Silano:

Fremont Bridge
Contract 7276
Falsework 3W

Your letter of May 2, 1972, transmitted Murphy Pacific Corporation Drawing 720501-4, " Falsework 3W, Footing Plan" which shows the falsework to be in close proximity with the railroad tracks.

The arrangement of falsework has been discussed with the appropriate railroad and has their verbal approval. Formal application has been made to the Public Utilities Commission for the necessary permit.

Very truly yours,

George M. Baldwin
Administrator of Highways
By Walter J. Hart
Walter J. Hart
Bridge Engineer

RWE/ag

cc A. E. Johnson
Ed Hardt w/attachs.

RECEIVED
MAY 10 1972
OFFICE OF
STATE HIGHWAY ENGINEER

Gen Files 2045-X102

RECEIVED
MAY 8 1972
FOR FILING

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
ENGINEERS
1 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

7216
Consult

May 2, 1972

Murphy Pacific Enterprises
5051 North Channel Avenue
Swan Island
Portland, Oregon 97217

Att: Mr. Alpo J. Tokola
Project Manager

Re: West Side Span Revisions

Gentlemen:

We are returning your drawings with the following dispositions:

Drawing No.	Description	Action
720501-2 Rev. 1	Falsework Tower 3W Elevation and Details	Reviewed as Noted
720501-3 Rev. 0	Falsework Tower 3W Structural Details	" " "

Our comments are indicated and noted on the above drawings.

We have also reviewed your drawing no. 720501-1, "West Side Span, Section 4G Replacement, General," which was furnished to us by Mr. R.O. Cunningham for our review. Since we received only one copy we are unable to include a marked-up copy.

It appears from the limited information shown on this drawing that your scheme for the removal of Girder Section 4G is feasible. In order to evaluate and adequately check this scheme we would need the particulars concerning the structural analysis. This should include the anticipated forces in the bridge members, struts and falseworks, as well as the anticipated falsework elevations.

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With respect to the "Removal Procedure" we have the following comments:

1) Please furnish details of the temporary strut at Panel Point 4 and the adjustable tie at Panel Point 0. How will this be secured to the existing approach structure?

2) Per Dwg. 69500-FE4, the lower deck stringers and wind chord have not yet been installed; however, step 5 states that they will be removed - please clarify!

3) The number of bolts which will be removed when the arch and girder splices are "partially" unbolted should be specified and not left to chance.

4) We would suggest that you elaborate on the procedure for unbolting the Girder 4G Splices. Prior to partially unbolting the girder flange splices, the falsework elevations should be set so that the computed moments at the girder splices are theoretically zero. Since the 1"ø A-325 bolts will be replaced by snugged 7/8"ø bolts which will not function in a friction splice, any residual moments at these splices will have to be carried by the web splice. Thus, when the web splice is unbolted, these residual moments will cause the 7/8"ø bolts in the flange splices to go into bearing. In order to remove these 7/8ø bolts, it may be necessary to readjust the falsework elevations.

   During Step 9 any residual moments at Splices 3G and 6G are eliminated by centering the 7/8"ø bolts in the flange holes. It might be better to check the alignment by centering the bolt holes in the splices on the bolt holes in the flanges.

5) Step 11 states that the Bridge will be jacked longitudinally to the West using the adjustable tie at Panel Point 0. We believe your intent is to "jack Girder Sections 7G and 8G longitudinally to the West."

The description of Stage 3 states that Falsework Tower 2 will be removed and it appears that this would occur prior to raising the Center Span. The Falsework should not be removed until the Center Span has been erected as we have stated in previous correspondence.

The bolt-up procedures for Deck Sections 7D and 11D as well as 9D and 10D should be determined in such a manner that the bolted-in stresses will be low.

We anticipate receiving the abovementioned information for our review.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano MSA

L.G. Silano
Project Engineer

LGS:mc

cc: W. Hart
R.O. Cunningham
H.S. Coulter

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7276
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HIGHWAY BUILDING • SALEM, OREGON • 97310

DATE May 2, 1972

TO R. E. Simpson, Division Engineer
Federal Highway Administration
Post Office Box 300
Salem, Oregon 97308

FROM George M. Baldwin
Administrator of Highways
By

Walter J. Hart
Bridge Engineer

SUBJECT

Panel Point 3 Revision
Fremont Bridge

In a telephone conversation with Mr. Silano of Parsons, Brinckerhoff, Quade & Douglas on Monday, May 1, 1972, we were advised that several revisions have been made to the details indicated on the April 21, 1972, advance prints.

Mr. Silano indicated that their finite element analysis produced stresses exceeding the allowable in the bottom flange plate and the lower web plates. He further advised that the bottom flange plate and the lower web plates are to be changed from two and one-half inches to two and three-quarter inch plates.

Murphy-Pacific was advised of this change on Monday, May 1, 1972.

MJH:dh

cc A. E. Johnson
L. H. Young
V. E. Skoog

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STATE HIGHWAY ENGINEER

NOTED
A.E. JOHNSON

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ENGINEERS

April 21, 1972

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Revisions to Panel Point 3

Gentlemen:

We are enclosing herewith one (1) print of our drawing, "Details of Panel Point 3." This drawing is being forwarded to you for information only in order to keep you advised as to our progress to date. The drawing is complete and all details have been checked. All that remains is verification of the plate sizes by the finite element analysis.

We were ready to run the finite element analysis on Wednesday, April 19, 1972 as the model configuration including the geometry and coordinates had been plotted and checked including the loading conditions; however, we decided to hold running the program after you informed us of the comment by Richardson, Gordon & Associates on the curved web plates. As explained below, we wanted to include in the analysis the actual curvature and, therefore, we delayed the run.

We have now completed all the necessary revisions necessitated by this change. We expect to receive by Monday the new plots and, hopefully, we will run the analysis by Tuesday the latest.

We would like to comment on the remarks raised by your consultant and other parties which you informed us of by phone on Wednesday. They are as follows:

1) We question the order of magnitude (39 ksi) of the stress amplifier created by the 2-foot radius in the girder web.

AEJ

NOTED
A. E. JOHNSON

The finite element analysis will resolve this question; however, we have in an effort to avoid any issue increased the radius to 4 feet.

2) We advised you in previous correspondence, dated March 16, 1972 that falsework FW2 & FW4 should remain in place until the center span is erected. This is necessary in order to avoid tension stresses in the curved bottom flange of the girder during erection. It will be necessary for the contractor to revise the erection procedure for drilling and bolting in deck sections 9D and 10D. This was discussed with Earl and Wright some time ago, and I believe they are working out a new procedure.

3) We do not comprehend the question raised by HDR&B pertaining to shear-lag when bolting in Deck Section 13 at Panel Point 14. We see this more as a problem of locked-in girder stresses. We had many months ago informed Earl and Wright in previous correspondence of the problem of locked-in girder stress when drilling and bolting in Deck Section 13. This, to our knowledge, has not been resolved to date.

We will advise you of this shear-lag problem after we receive the HDR&B comment; in any event, we see this as an erection problem not related to the revised details at Panel Point 3.

With respect to the FHA comments in their memorandum of April 17, 1972, please be advised of the following:

1) The comment pertaining to turning out the thickened web plate, we had discussed with you in previous correspondence, and have mutually agreed that dimensional tolerances and other related problems would make it impractical, if not impossible, to install the arch-rib.

2) The thickness of the bottom flange plate of the girder and similarly the thickness of the extension plate for the top flange of the arch-rib were determined by sectioning the girder for the known forces. In the preliminary sketch by HDR&B, thicknesses of similar plates were defined with a plus or minus tolerance. This in no way should be construed to represent the final plate thickness.

In any event, please be assured as we have stated before that the final plate sizes will be determined after we have had an opportunity to review the results of the finite element analysis. For this reason, we have not issued to you the enclosed drawing as finalized.

3) The taper, referred to in Section D-D, was selected in accordance with the recommended procedure for transitioning of plate widths Fig. 221(C) of the AWS D2.0-69 Specifications. Again, in order to conform to their request and to provide a more gradual transition, we have increased the radius to 12'-0".

4) The fill plates referred to in Item 4 were noted and detailed on our previous submission, dated April 14, 1972.

If you have any further questions on these or other related matters, please feel free to contact this office.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L. G. Silano
Project Engineer

LGS/nw
Encs.
cc: T. Edwards/ with encs.
A. E. Johnson/ with encs.
R. O. Cunningham/ with encs.

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OREGON STATE HIGHWAY DIVISION
INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

DATE April 20, 1972

TO Memo to the Files

7276
Original

FROM ORIGINAL SIGNED
WALTER J. HART
Walter J. Hart
Bridge Engineer

SUBJECT Panel Point 3 Revision
Fremont Bridge
Contract 7276

At 11:55 am on Thursday, April 20, 1972, a call was received from Mr. Silano, of Parsons, Brinckerhoff, Quade & Douglas. The purpose of his call was to discuss the details for the revision at Panel Point 3. He indicated that they are increasing the radius in the 2 1/2 inch web plate at the junction of the tie girder and arch rib to 4 feet 0 inches. This should improve the stress transfer at this point of change in the section.

The condition of residual stress in the deck-to-tie-girder bolts at Panel Point 14 were discussed. Parsons, Brinckerhoff, Quade & Douglas will investigate this condition. They have requested that we furnish them any calculations we may have on this stress condition. The problem of controlling the stresses during bolting down of deck sections 9D and 10D was discussed. Mr. Silano indicated that he believed that Earl & Wright were to investigate this as part of the erection procedures.

Mr. Silano indicated that it was their thoughts that the falsework bent at Panel Point 4 should not be lowered during any of the back span erection.

I requested that a copy of Parsons, Brinckerhoff, Quade & Douglas's finite element analysis of the revised Panel Point 3 detail be sent to Bob Crabtree of Howard, Needles, Tammen & Bergendoff as soon as it is available.

WJH:dh

cc Tom Edwards
A. E. Johnson
H. A. Schell
H. S. Coulter
R. O. Cunningham
Robert Crabtree, H.N.T.B.

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TOM EDWARDS
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2045-X102

ENGINEERS

April 14, 1972

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Panel Point 3

Dear Walter:

Enclosed please find one (1) advance-print of our drawing, "Details at Panel Point 3," which represents our progress as of Thursday, April 13, 1972. This print is being forwarded for informational purposes only.

At present, the drawing is virtually complete. We are now in the process of checking the details. We expect that this phase will be completed by Friday, April 21, 1972.

The verification of the plate sizes and the check on stresses by the finite element analysis is progressing nicely. We have today transmitted to McDonnell Douglas in St. Louis the geometric data for plotting. It is expected that they will be plotting the geometry today and that we, hopefully, will receive this information on Monday. Upon verification of the plot, we will run the loading cases mentioned in our previous letter, dated April 7, 1972. We expect that this will take place the latter part of next week.

We anticipate that after the details have been finalized, the Contractor will prepare shop drawings for our review. Included with the shop drawings should be all the necessary procedures for carrying out this work. It is important that this be spelled out in advance, in order to maintain control on geometry and fit-up which is all essential to the behavior of the structure.

FILED
EDWARDS

If you have any questions, please do not hesitate to contact this office.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L. G. Silano
Project Engineer

LGS/rw

Enc.

cc: T. Edwards
A. E. Johnson
R. O. Cunningham

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ENGINEERS

7216
Consult.

April 7, 1972

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Panel Point 3

NOTED
A. E. JOHNSON

Dear Walter:

We are enclosing herewith one (1) print of our drawing, "Details at Panel Point 3," showing our progress as of April 6, 1972. The drawing is virtually complete except for some minor details, which we discussed with you relating to a platform in the girder for the protection of maintenance personnel and a cover plate between the gussets to exclude pigeons, etc., in the intersection area.

We are now in the process of checking the drawing for details, splices, etc. Our analysis check for verification of plate sizes by the finite element technique is progressing very nicely. We are checking the arch-girder section for three loading conditions, namely:

1. Loading Case DL + LL + Imp. — Live Load, selected to produce maximum compression in the bottom flange of the girder (negative moment).

2. Loading Case DL + LL + Imp. — Live Load, selected to produce maximum tension in the bottom flange of the girder (positive moment).

3. Loading Case DL + LL + Imp. — Live Load, selected to produce maximum thrust in the arch.

We have completed the model configuration for the finite element analysis. The load distribution to the plate elements has been computed and checked. We have also completed and checked the programming for the geometric analysis of the model configuration.

AEJ.

We expect that next week we will plot the model configuration by computer, as a check to our work before running the analysis. Hopefully, if all goes well, we will be running the analysis the latter part of next week. It appears that we will have the design finalized by approximately April 21, 1972.

If you have any questions, please feel free to call.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano

L. G. Silano
Project Engineer

LGS/ms

Enc.

cc: T. Edwards
E. Johnson
R. C. Cunningham

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2045-X102

ENGINEERS

March 31, 1972

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Panel Point 3

Dear Walter:

As discussed with you and Al Johnson on Monday, March 27, 1972, we are enclosing one (1) print of our drawing, "Details at Panel Point 3," which represents our progress as of Thursday, March 30, 1972. We have tentatively proportioned and sectioned up the girder-rib section to satisfy the forces determined from the computer runs. The plate thickness will be determined or verified based on the results of the finite element analysis which we have started working on now that the member has been sectioned.

You will note, that this scheme requires some modification or shortening of the arch-rib where it joins the girder. To avoid this, we have given considerable thought to treating this connection similar to a truss wherein the girder-web would act similar to gussets and frame outside and over the webs of the arch rib. This would be desirable since it would not require modifications to the arch-rib.

Yesterday, you indicated that the Federal Highway Administration had suggested that we maintain the in-to-in of girder-webs at 48 inches and let the thickened (2½ inch) girder-web protrude on the exposed side. This is what we had contemplated and would require if we were to treat the girder-webs as a gusset to permit framing the arch-rib between these webs. While it has advantages, it has problems associated with it which cannot be overlooked.

NOTED
A. E. JOHNSON

NOTED
TOM EDWARDS

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ENGINEERS

7-2-16
Consult

March 31, 1972

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Panel Point 3

Dear Walter:

As discussed with you and Al Johnson on Monday, March 27, 1972, we are enclosing one (1) print of our drawing, "Details at Panel Point 3," which represents our progress as of Thursday, March 30, 1972. We have tentatively proportioned and sectioned up the girder-rib section to satisfy the forces determined from the computer runs. The plate thickness will be determined or verified based on the results of the finite element analysis which we have started working on now that the member has been sectioned.

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NOTED
A. E. JOHNSON

NOTED
TOM EDWARDS

When we considered this approach, we were concerned about tolerances and accuracy of fabrication. The girder-webs are separated at this location by a 2½" thick plate to which would be bolted the top flange of the arch-rib. This plate permits the transfer of the stress from the top flange of the rib to the girder-web plates. The width of this plate therefore controls the distance in-to-in of girder-webs. To permit entrance of the arch-rib for bolting-up the connection, the width of this plate would have to be accurately set with a minimum of a 1/32 inch over-clearance. Because of the heavy plates, the constraints in this area and distortions in the make-up of the arch-rib member, we have reservations whether these 2½"web plates can be sprung to permit entrance of the rib and more importantly, if the high-strength bolts can effectively draw these plates together, to permit the connection to work in friction.

After you have had time to reflect on this aspect or any of the details shown on this drawing, we would appreciate hearing from you.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L. G. Silano
Project Engineer

LGS/nw

Encs.

cc: Tom Edwards, Dep. State Highway Engr. w/enc.
Ed Johnson, Asst. Highway Engr. w/enc.

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7276
Consult.

March 16, 1972

Mr. Tom Edwards,
Deputy State Highway Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Dear Mr. Edwards:

We are submitting herewith a preliminary layout of Sketch SK 8 - Alternate 3 - Details at Panel Point 3. The underlying principles of Alternate 3 are that the stress in the top flange of the arch rib is transferred to the gusset plate and, hence, directly into the 2 $\frac{3}{4}$ inch web plates of the tie girder.

The top flange of the arch rib will be removed at the juncture with the bottom flange of the girder, as shown on the enclosed Sketch SK 8. This will permit access to the juncture piece for the necessary modifications to accomplish a lapped splice of the girder flange.

The tension splice of the tie-girder flange at the juncture piece will be accomplished similar to Alternate 2, detailed on Sketches SK 6 and SK 7, previously submitted. The splice is detailed to completely by-pass the juncture piece and is designed for the full capacity of the material (100% of the 3 $\frac{1}{4}$ inch flange plate).

Similar to Alternate 2 and for the reasons outlined in our letter of March 10, 1972, it is contemplated that a 9 $\frac{3}{8}$ inch section of the riverward juncture piece will be removed to avoid any stress transfer through the juncture piece.

The outstanding legs of the girder flange will be removed flush to the tie-girder web, as shown on the drawing, in order to accommodate the gusset plate. The area removed will be replaced by the addition of two 7 inch x 2 $\frac{1}{2}$ inch plates welded to the gusset and spliced as indicated.

NOTED
JOM EDWARDS

The shoreward juncture piece would be modified in the same manner at Alternate 2. The bottom flange of the arch-rib would be removed at the juncture to permit modification of this piece to accommodate a lap-splice of the girder flange. The splicing of the lower flange of the arch-rib by means of the bent-plate is predicated on the basis that the bent-plate should not be in tension at any time during the erection stage. This presupposes that false-work FW 2 & 4 will not be lowered or removed prior to erection of the main span. Again, similar to the riverward splice, this is designed for the full capacity of the girder bottom flange (100% material) and not the actual stress or the average of the actual stress and the capacity, whichever is greater. We would like to emphasize that these bolted splices will in no way impair the integrity of the structure and, in fact, will restore the structure at this location to its complete integrity.

The details presented in Alternate 2 and Alternate 3 are fundamentally complete, but a check of the details has not been made; accordingly, they are stamped "Advance Print for Information Only". The foregoing information will permit you to make an early decision as to which layout should be finalized in order that the contractor can repair the east girders as soon as possible and complete the erection on the east side of the river.

We believe and maintain that repairs to the west girders can be accomplished in place. At the present stage in the erection of the west girders, the repairs shown on Alternates 2 or 3 can be accomplished with no endangerment to the public safety or to the structure. Orderly procedures are necessary to accomplish this work and they will have to be fully explained in advance and adhered to in all respects. It is our opinion that it is not necessary to dismantle the west girders in order to repair them. If it is decided to dismantle them, we believe it will take much more time for the repairs and will cost considerably more money.

We are ready to meet with you and discuss this matter at your convenience. Furthermore, we are available to assist you in implementing the work.

Very truly yours,

Alfred Hedefine

Alfred Hedefine

AH/am
Encs.

CC: Mr. Walter Hart
Mr. H. S. Coulter
Mr. Robert Cunningham
Mr. Edgar Johnson
Mr. Robert Crabtree
Mr. Al Johnson

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March 10, 1972

Mr. Tom Edwards,
Deputy State Highway Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

NOTED
A. E. JOHNSON

Dear Tom:

As promised at our meeting in Portland last week, we are transmitting advanced copies of the following preliminary drawings:

SK 6 Alternate 2 - Details at Panel Point 3, Sheet 1

SK 7 Alternate 2 - Details at Panel Point 3, Sheet 2

In accordance with your request these drawings have been carried out in sufficient detail to describe a suggested method of stress transfer between the tie girder flange and arch rib by by-passing the juncture piece. Alternate 2 we find is preferable to Alternate 1, shown on Drawings SK 3, 4 and 5, furnished to you in July 1971, and subsequently in November 1971.

We propose for the riverward juncture piece to remove from the bottom flange a 9-3/8" section of the juncture piece for the full flange width of 66". The flange would be restored to its full integrity by a double lap splice designed for 100% of the capacity of the 3-1/4" flange. This would be done for all four of the girders at this location.

We suggest the removal of these sections from this juncture piece to avoid any possibility of another crack. Such cracking is possible at low stress levels because of the low fracture toughness and brittleness evidenced by this particular material. A crack in the juncture piece itself would not concern us because the splice plates

NOTED
TOM EDWARDS

Mr. Tom Edwards,
Deputy State Highway Engineer

March 10, 1972

are capable of developing the full capacity of the section. We are recommending this removal because we wish to eliminate the possibility of stress transfer through the juncture piece in order to prevent the occurrence of a crack, with eventual propogation into the web.

Alternate 2 is preferred to Alternate 1 because it is simpler and transfers stress more directly, it has smaller splice plates which are easier to handle, less modification to the internal diaphrams and less work in drilling and bolting. Both alternates accomplish the same purpose and keep intact the original mode of stress transfer within the girder.

We are currently developing Alternate 3 which utilizes gusset plates for stress transfer and which we will forward to you shortly. At present it is not sufficiently detailed to include with this presentation.

By copy of this letter we are forwarding copies of these drawings to Mr. Edgar Johnson and Mr. Robert Crabtree of Howard, Needles, Tammen & Bergendoff for their review and comments.

Should there be any question pertaining to these drawings, please feel free to contact this office.

Very truly yours,

Alfred Hedefine

Alfred Hedefine

AH/mr
enclosures

cc: Mr. Walter Hart w/encls.
Mr. H. S. Coulter w/encls.
Mr. Robert Cunningham w/encls.
Mr. Edgar Johnson w/encls.
Mr. Robert Crabtree w/encls.

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I-405-8(17)--3
7276

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
February 16, 1972

SUBJECT: Fremont Bridge
Contract 7276

To: Consult.

Memo to the Files

cy Memo 2-17-72

At 1:10 p.m. on Wednesday, February 16, 1972, a call was placed to Mr. Silano of Parsons, Brinckerhoff, Quade & Douglas, in order to obtain a progress report on their checking of possible causes of the fracture in the tie girder of the Fremont Bridge.

Mr. Silano reported that they have not run a finite element analysis on the junction piece as yet. They are working on this and plan to transmit the information to McDonald-Douglas on Wednesday evening. They anticipate that they may have some results by Friday, February 18. Mr. Silano is to give us a telephone report of these findings as soon as they are available.

I questioned Mr. Silano on when a formal written transmittal of his findings could be expected. He indicated that the very best that could be expected would be a report by February 28.

Mr. Silano also inquired about the availability of a copy of the metallurgist's report. I advised him that I would check into this and if one was available, a copy would be forwarded.

Walter J. Hart
Bridge Engineer

NOTED
A. E. JOHNSON

WJH:dh

cc Tom Edwards
A. E. Johnson
E. L. Hardt
I. D. Merchant
H. A. Schell

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7276

January 21, 1972

Parsons, Brinckerhoff, Quade & Douglas
111 John St.
New York City, New York 10038

Attention: Mr. Louis G. Silano

Dear Mr. Silano:

cy Wilde 1-24-72

Erection Drawings
Fremont Bridge
Contract 7276

We have reviewed Earl & Wright's Drawings Nos. 69500-FW28 and 69500-FW29 with regard to the temporary use of some bottom deck lateral system members as bracing for falsework tower # 3.

We have no objection subject to the following:

1. The members shall be restored to their original condition, i.e., extra drilled holes shown on 69500-FW28 shall be filled and members shall be repainted if required.

2. The State reserves the right to reject any member that shows signs of overstress or misuse.

The other drawings and information submitted by your January 5, 1972 letter are being reviewed at the present time. Any further comments that we might have will be sent to you in the near future.

Very truly yours,

George M. Baldwin
Administrator of Highways
By ORIGINAL SIGNED
L. L. WALLACE

L. L. Wallace
Bridge Design Engineer

NOTED
A. E. JOHNSON

LLW/ag

cc: A. E. Johnson
R. W. Ellison

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OFFICE OF
STATE HIGHWAY ENGINEER

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JAN 20 1972

Geo Files

2045-X102

I-405-1(17)303

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111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117
ENGINEERS

7276

Copy IDAHO
Wallace Hart

January 14, 1972

Mr. Walter Hart, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

RECEIVED
JAN 18 1972
OFFICE OF
STATE HIGHWAY ENGINEER

Re: Fremont Bridge
Contract No. 7276

OK Maine 1-18-72

Dear Mr. Hart:

This is to confirm a telephone conversation with Ivan Merchant on December 21, 1971, wherein we discussed the possibility that several other locations exist in the structure wherein plates, other than the juncture pieces at Panel Point 3, may have been installed so that applied stresses will be normal to the direction of rolling. We call your attention to the following shop drawings wherein the plates in question are detailed:

Dwg. No.	
K3510-607	Flange plate hb which has been shop welded for length for hanger L21G21.
K3513-104DG	Flange plate pba which has been butt welded for length on girder sections G5, G6 left, G7 and G8 left.
K3513-105AB	Flange plate pg on cross frame CF1.
K3513-201AC	Flange plate ph on posts C1R and C2R.
K3513-205AD	Web plates pp and pt for girder sections G1R and G2R.

NOTED
A. E. JOHNSON

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L.G. Silano
Project Engineer

LGS:mc
cc: R.O. Cunningham
R.L. Schroeder

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JAN 17 1972
BRIDGE DIVISION

NOTED
R. W. Nelson

Gen. Files 2045-A040

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JAN 20 1972

William Hart
copy to AE Johnson

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ENGINEERS

J-405.8(17)-543
Task 71

January 13, 1972

NOTED
A. E. JOHNSON

Murphy Pacific Enterprises
P.O. Box 23007
Oakland, California 94623

Att: Mr. Jack Geer
Project Engineer

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L.G. Illano
Project Engineer

cy mailed 1-18-72

Gentlemen:

At the request of Mr. Richard Leber of Earl and Wright, we met yesterday to review the plans for the Center Span Jacking Assembly Dwgs. 69500-FW30, 31, 32, 33, in order to expedite the release of the drawings to your shop for fabrication.

In our letter of November 19, 1971, we stated that we believed that the Jacking Beams should be restudied. Two of our objections were based on the lack of overall continuity of the beams in the longitudinal direction and the use of many small pieces with one sided fillet welds. Mr. Leber agreed to add a series of full depth stiffeners inside the upper assembly jacking beams to provide stiffness and continuity. He advised us that he would revise the one sided fillet welds on the hanger plates and gimbals to double fillet welds or full penetration butt welds. While we believe these two changes will improve the integrity of the Jacking Beams, the fabrication, assembly and inspection should conform to the highest possible standards. This assembly should not be regarded as an incidental tool of construction as its function is one of the most vital in the entire erection of the bridge.

We still feel that additional study of the Jacking Beam could result in an improved assembly. However, this jacking beam assembly is the primary responsibility of the contractor.

There were some other questions discussed concerning the details of Drawings 69500-FW30, 31, 32 and 33. These questions

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BRIDGE DIVISION

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
ENGINEERS

included the lateral holding devices for the main span, the repair of the slots and floorbeam brackets on the girder at Panel Point 14 and the possible overstress of the diaphragm shown in Section C-FW32. Mr. Leber stated that he would study these questions before resubmitting revised drawings for review.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L.G. Silano
Project Engineer

LGS:mc

cc: W. Hart
R.O. Cunningham
R.L. Schroeder
R. Leber

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JAN 18 1972
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ENGINEERS

I-405-8(17)303
7276
Sp.

January 3, 1972

NOTED
A. E. JOHNSON

Mr. Tom Edwards,
State Highway Engineer
Department of Transportation
Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Panel Point 3

Dear Tom:

We would like to bring you up to date concerning our activities since last talking to you by telephone on November 23, 1971. We have and are continuing to explore, from an analytical standpoint, the forces that existed at Panel Point 3 during the lowering operation of the falsework bent at Stage 6 of the erection scheme. After having determined the forces existing at Panel Point 3, we will attempt to check the probability of their having been the cause of the crack which occurred in a tension flange of the south girder at Panel Point 3.

So far we have analyzed the erected structure (Panel Point 0 to Panel Point 14) as a space frame using linear elements for the loading case ("Erection Stage 6 while drilling and bolting the first 15' 6" of 9 D") to which we have included the effects of a 20° temperature drop and a 2" differential of the falsework support elevations at the north and south girder. This was to simulate conditions which we understand existed at the time the crack developed. It was anticipated that such an analysis would reveal the presence of torsioning moments which are not accounted for in a plane frame analysis.

The result of this investigation discloses that, while torsional moments do exist, their magnitudes are small and the associated shear stresses are of the order mentioned in our letter of November 18, 1971 to Mr. Ivan Merchant.

NOTED
TOM EDWARDS

CY - Bridge Boulder 1-7-72

CY Memo 1-6-72

PARSONS, BRINCKERHOFF, QUADE DOUGLAS, INC.

Mr. Tom Edwards

January 3, 1972

Concurrently and independently of the linear space frame analysis, we have been investigating a finite element analysis. We are hopeful that this investigation will evaluate plate stresses in the girder at Panel Point 3, in particular the stresses at the juncture piece. We expect the analysis will include the secondary effects about which Ivan Merchant is concerned.

Undoubtedly, you are aware that the application of the finite element analysis to engineering problems is a recent development and its particular application to this problem is unique. There are numerous problems associated with the finite element technique and hence a finite element solution will take time to complete. We will keep you advised as to our progress.

Sincerely,

Alfred Hedefine

Alfred Hedefine

AH/mr

RECEIVED
JAN 5 1972
OFFICE OF
STATE HIGHWAY ENGINEER

FORM E-20

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
December 27, 1971

SUBJECT: Fremont Bridge
Bill for Extra Work, dated
Oct. 20, 1971 from PBQ & D

To:

Mr. A. E. Johnson
Assistant State Highway Engineer

B U I L D I N G

On October 22, 1971, I received an invoice from Parsons, Brinckerhoff, Quade & Douglas in the amount of $4,668.11. This bill has been compared with the consultant's agreement and is in order for payment if the State decides the invoice should be paid at this time. Circumstances leading up to this invoice are as follows:

In the latter part of June, girder sections 205G1R and G1L were stored on the marine boss, presumably ready for erection. Our field forces, in a cursory examination, noticed a crack in the single V butt weld joining the arch rib top flange to the machined junction piece on 205G1R. Ultrasonic and X-ray examination indicated that this weld could be a very poor quality throughout. Because of the importance of the connecting weld, the consultant was requested to come to Portland for consultation (see memo to the file dated 7-6-71 of an on-site meeting with the consultant's representative on June 30).

At the June 30 meeting it was my belief that this portion of the structure encompassing butt welds connecting the arch rib to the tie girder and welds in the bottom flange of the tie girder should be reinforced with splice plates. I directed the consultant to prepare details of bolted splices which would carry the computed stress with no value given to the connecting butt welds. A short time later it was determined that the butt weld in question between the top arch rib flange and the machined junction piece was sound and the idea of splice plate reinforcement was dropped.

The invoice received on October 22 is for partial payment to the consultant for preparation of these details. Additional work has been done on bolted splice plate reinforcement since the girder fracture on October 28. In a discussion with Lou Silano of Parsons, Brinckerhoff, Quade & Douglas on November 3, I acknowledged receipt of the October 20 invoice; however, I told him I was not sure the State would acknowledge this because of the girder fracture which had occurred since receipt of the invoice.

NOTED
W. J. HART

I do not feel that the State should pay this invoice at this time as I believe there is a possibility that when all studies of the girder fracture are completed, that the results will point to an improper design. If this should be true, then I do not believe Parsons, Brinckerhoff, Quade & Douglas are entitled to this payment and additional payments to complete their bolted splice plate details.

Ivan D. Merchant
Bridge Engineer

IDM:dh
Enclosures

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DEC 28 1971
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STATE HIGHWAY ENGINEER

2045-A040

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

October 20, 1971

Mr. Ivan D. Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge

Dear Sir:

In conjunction with the recent situation involving Panel Point 3, we have provided engineering services which fall outside the realm of "Scope of Work" covered in our engineering agreement dated September 21, 1966. Our services for this work included the on-site inspection, design and the preparation of Drawing SK2 "Reinforcement at P.P. 3".

We are enclosing our bill for this service under the extra work provisions of our agreement. Your consideration of this matter is appreciated.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L.G. Silano
Project Engineer

LGS:mc
Enc.

NOTED
W. J. HART

RECEIVED
OCT 22 1971
BRIDGE DIVISION

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NOV 20 1971
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14 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
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ENGINEERS

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cy Marine 11-26-71

November 18, 1971

Mr. Ivan D. Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

NOTED
A. E. JOHNSON

Re: Fremont Bridge

Dear Mr. Merchant:

As discussed in your telephone conversation of November 8, 1971, with Mr. Silano, we are transmitting herewith one (1) print each of the following drawings:

SK3 Reinforcement to P.P.3

SK4 Reinforcement to P.P.3

SK5 Southwest Girder Repair, P.P.3

Please be advised that the drawings are not checked nor are the design calculations checked either. They are being forwarded to you for informational purposes only and represent the status of the work as of November 12, 1971 when all work ceased, as was agreed to in the above mentioned telephone conversation.

Our re-evaluation of the erection stresses and deformations during the erection procedure - Stage 6 - reveals that the structure's behavior can be reliably predicted from the analysis obtained by the "Stress" program. This was evident after evaluating the deformed structure in relation to the offsets from the tangent grades furnished to us by Mr. Cunningham. We are also enclosing a sketch which shows the direct comparison between the predicted deformations of the structure and deflections measured by Mr. Cunningham. You will note there is close agreement between the theoretical and actual measured deflections. Correlation of the behavior of the links at

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NOV 22 1971
BRIDGE DIVISION

NOTED
IVAN D. MERCHANT

Mr. Ivan D. Merchant,
Bridge Engineer

November 18, 1971

Panel Point 0 with that predicted by the analysis present definite evidence of this correlation.

The combined stresses in the bottom flange of the tie girder have been evaluated at the point of the crack. These stresses are based on the gross section properties of the girder. The stress calculations were made using the girder moments and axial force determined in the Murphy-Pacific computer run for Stage 6 erection, "while drilling and bolting the first 15'-6" of 9D." The effect of the bolted-in-moment shown on Murphy-Pacific Drawing 69500-ST2A has been included. Further, the effect of the torsion induced by lowering the south girder 2" below the north girder has been evaluated. This 2" differential movement was reported to us verbally by you in a recent telephone conversation. The tensile stress due to bending and direct tension in the girder is 16.2 ksi. The shear stress associated with bending is 0.05 ksi. The torsional shear stress due to the 2" lowering differential is approximately 2.4 ksi.

All acting stresses have been combined in order to find the principal stress in the bottom flange of the girder.

The first principal stress is 16.6 ksi. (tension). This stress is in the plane of the bottom flange of the girder and it is oriented 8° from the longitudinal axis of the girder. The second principal stress is 0.4 ksi. (compression). This stress also acts in the plane of the bottom flange and it is normal to the direction of the first principal stress. The maximum shear stress is 8.5 ksi. For a 5" to 8" thick A-588 plate, A.A.S.H.O. permits a tensile stress of 23 ksi.

Only because of the time element, a rough calculation was made to determine the torsional stresses caused by a 2" differential lowering between the North and South Girders. These calculations do not include any longitudinal tensile stress due to warping torsion because of the restraining action at Panel Point 3. There is some restraint due to the arch rib framing into the box girder at this point. These additional stresses can be calculated accurately by simulating this erection condition on the computer. We had not done this at the time we were directed to stop work.

There are two indications which lead us to believe that there might have been torsional moments present in the south girder when the crack occurred.

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BRIDGE DIVISION

Mr. Ivan D. Merchant,
Bridge Engineer

November 18, 1971

1. The webs and bottom flange of the south girder are offset laterally at the crack. Your sketch of 11/9/71 shows this displacement to be 3/16".

2. The portal at Panel Point 0 is laterally offset by more than 2" according to your sketch of 11/9/71.

We believe that the possible effect of torsional moments requires further investigation. This investigation should include the falsework support of the girders, the lowering operations, a detailed survey of the deformed structure and the predicted stresses due to torsion based on a detailed analysis.

The total dead, live and impact stresses in the bottom flange as shown in our design are a maximum of 14.6 ksi. (tension) and a minimum of 0.6 ksi. (tension) at the location of the crack. This calculation includes a ± 5000 kip - ft. moment allowance. As before, these stresses were based on the gross section properties of the girder at the location in question. Thus, the maximum dead, live and impact tensile stress under working conditions is less than the 16.2 ksi. tensile stress calculated during the erection. These stresses compare with the allowable stress of 23 ksi. for the A-588 steel used.

As stated above, and when considering all aspects of the problem, the stress range during erection in the tension flange of the girder at the point of the crack in the flange is slightly greater than that which can be expected during the service life of the structure.

In view of the foregoing, together with the fact that we feel we do not know all of the circumstances that have developed concerning this problem to date, it would appear advisable not to erect the units on the east end of the bridge similar to the one that has cracked, until the cause of the cracking has been determined.

The links at Panel Point 0, particularly that of the South Girder, in its present situation are bearing on the lower portal frame diaphragm. This was brought about by the large longitudinal movement at the end of the structure and the rotation of the girder at Panel Point 0 under the erection condition. The link was originally designed for an axial compression load of 900 kips with an allowable compression stress of 14.3 ksi. The actual design compressive stress is 11.1 ksi. Our

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NOV 22 1971
BRIDGE DIVISION

Mr. Ivan D. Merchant,
Bridge Engineer

November 18, 1971

calculations show that the link now is acting as a beam column with a 2-3/4" eccentricity and is seriously overstressed. The contractor should be made aware of this and the necessary steps taken to alleviate the situation.

We trust that the information contained herein indicates to you the status of our work at present. We are not proceeding further until advised to do so.

Very truly yours,

Alfred Hedefine

Alfred Hedefine

AH/mr
enclosures

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NOV 22 1971
BRIDGE DIVISION

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PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
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ENGINEERS

November 2, 1971

#2045-X102

7276
Consult

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OCT 30 '72
REFER TO
FOR
Info | Invest | B/D | D/R | Sign | Act | File

Mr. Ivan D. Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

NOTED
A.E. JOHNSON

Re: Fremont Bridge

Dear Sir:

We are enclosing herewith a copy of Drawing SK-2, revised 11-1-71, covering details of corrective measures to be applied to the East Approach tie-girders.

As per your suggestion, we contacted the office of W. J. Wilkes, Chief, Bridge Division of the Federal Highway Administration and spoke with Mr. Frank Sears concerning the comments outlined in their letter to Mr. Ralph M. Phillips (Regional Federal Highway Administration) dated July 14, 1971.

We believe we have resolved the questions posed by their comments and the corrective work on the East Approach tie-girders may now proceed.

We are now working on corrective measures to the West Approach tie-girders which will follow shortly.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

D3 40

L. G. Silano
Project Engineer

NOTED
TOM EDWARDS

P.S. We anticipate receiving shop drawings on the above for our review.

SS/mw

MR. EDWARDS

Encl. [redacted]

cc: Murphy Pacific, Attn: Mr. Jack Geer (w/reprod. print)
R. V. Cunningham (w/print)
R. L. Schroeder
Pittsburgh Testing Laboratories (w/print)
W. J. Wilkes (w/print)

Project File Fremont Bridge, Superstructure

FORM FHWA-121A (REV. 4-70)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

T Hl

DATE: July 14, 1971

TO : Mr. Ralph M. Phillips
Regional Federal Highway Administrator
Portland, Oregon
ATTENTION: Roy H. Tokerud

In reply refer to: EN-32

FROM : M. F. Maloney, Director of Engineering
By: W. J. Wilkes, Chief, Bridge Division
Washington, D.C.

SUBJECT: Oregon I-405-8(17)303 Weld Repair Detail

With reference to the proposed splice detail at panel point 3 as transmitted by Mr. Silano's letter of July 8, 1971, we have the following comments:

1. The 42½ x 1 3/4" splice plates which terminate between the machine weldments each have 10 holes in net section for the 1½" bolts. Since these plate terminations are immediately adjacent to a section of the tie girder flange which was apparently designed for 8-1" holes, we suggest the bolt hole detail be modified to provide 6 holes in the first line of bolts and 8 holes in the second line of bolts, as has been done at the other end of one of these plates.

2. The 40 x 2 3/4" splice plate at the bottom of the arch rib indicates 12 rows of 1½" bolts with 11 bolts per row. We question that 11 bolts at 3 3/4" centers should be placed in the 40" width of plate.

3. It appears that a higher shear stress than 13,500 psi was used for the A354 bolts, since we do not check the design for 75% of the strength of the members using this value.

Please advise of the results of the discussions with the State on these matters.

RECEIVED
JUL 19 1971
Resident Bridge Engineer, Oregon Division

7/19/71

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS INC.
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS
ARCHITECTS
PLANNERS

WALTER S. DOUGLAS
ALFRED HEDEFINE
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD
WILLIAM T. DICKMAN
THOMAS R. KLESEL
WINFIELD O. SALTER
HENRY L. MICHEL
PERRY D. LORD

WILLIAM BARCLAY PARSONS 1885-1932
HENRY M. BRINCKERHOFF 1919-1943
MAURICE N. QUADE 1932-1966

ASSOCIATED CONSULTANTS
EUGENE L. MACDONALD
JOHN O. BICKEL
RUSH F. ZIEGENFELDER
DONALD C. HYDE
JOHN J. WHITE

July 8, 1971

Mr. Ivan D. Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Contract No. 7124
Reinforcement at
Panel Point 3

Dear Sir:

Per our telephone conversation of July 7, 1971 we are enclosing herewith two (2) prints each of Sketch SK-2 showing the proposed reinforcing of the juncture pieces at Panel Point 3.

These layouts were developed in accordance with the conclusions of our meeting in Portland on June 30, 1971; namely, that:

(1) Remedial work would be by bolted splices.
(2) All reinforcing plates or splice material will conform to the requirements of ASTM A-588 steel.
(3) Reinforcing will be accomplished wholely within the tie-girder and arch-rib.
(4) Bolts will be 1-1/4" ϕ high strength bolts conforming to ASTM A 354 Grade BC.

Currently, we are in the process of checking these details; however, throughout the course of their development we have been in contact with the Contractor so that he is informed of the requirements for strengthening this joint and has initiated steps in that direction. By copy of this letter we are advancing these details to Murphy Pacific, Contractor for this project, in order that they may proceed with the shop detailing and procurement of the required material.

Should there be any questions, please do not hesitate to contact this office.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L. G. Silano
Project Engineer

LGS:A
cc:R. L. Schroeder
B. Cunningham
Murphy Pacific
W. S. Wilkes (FHA)
Roy Tokerud

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JUL 13 1971
Resident Bridge Engineer

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FEB 14 1972
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MURPHY PACIFIC ENTERPRISES

4300 EASTSHORE HIGHWAY • EMERYVILLE, CALIFORNIA

I-405-8(12)203
7276
Correct.

July 12, 1971

RECEIVED

Oregon State Highway Division
5821 N.E. Glisan Street
Portland, Oregon 97213

Attention Mr. R.O. Cunningham
Resident Bridge Engineer

Gentlemen:

Today we received a copy of Parsons, Brinckerhoff, Quade and Douglas's letter dated July 8, 1971, with sketch SK2 concerning reinforcing P.P. 3.

Approximately two weeks ago we received your letter of June 25, concerning the weld at P.P. 3 wherein you directed us to submit to you a procedure for repairs. We were later verbally advised to take no action on the request for repairs.

Within the past ten days, Mr. Spirz and Mr. Dias of our organization have been in contact with Mr. Silano and Mr. Merchant in order to determine local availability of materials for potential reinforcement of P.P. 3.

On Friday, July 9, I had a meeting in Salem with Mr. Merchant and Mr. Johnson concerning rejection of the weld at P.P. 3. It was then determined that the State would make further investigation through radiographing and ultrasonic testing to determine the reasons for rejection. Until these results are available, we were directed to take no action on the reinforcement of the joint.

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JUL 14 1971
BRIDGE DIVISION

As explained in our meeting, we have undertaken through our consultants, Earl and Wright, the investigation and proposal of an alternate erection scheme. This scheme will allow us to proceed with erection on the water side of P.P. 10 without erecting the girders at P.P. 3. As of Saturday night, they completed this investigation along with all computer runs. We have sent two of our consultants to New York for the purpose of resolving the alternate scheme with Mr. Silano so that we might proceed with uninterrupted erection next Monday.

Very truly yours,

MURPHY PACIFIC ENTERPRISES

E. D. Geer
Projects Manager

EDG:nl

cc: Messers. L. Silano
I. Merchant

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JUL 14 1971
BRIDGE DIVISION

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS INC.
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
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ENGINEERS
ARCHITECTS
PLANNERS

WALTER S. DOUGLAS
ALFRED HEDEFINE
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD
WILLIAM T. DYCKMAN
THOMAS R. KUESEL
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WILLIAM BARCLAY PARSONS 1885-1932
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MAURICE H. QUADE 1932-1966

ASSOCIATED CONSULTANTS
EUGENE L. MACDONALD
JOHN O. BICKEL
RUSH F. ZIEGENFELDER
DONALD C. HYDE
JOHN J. WHITE

July 8, 1971

Mr. Ivan D. Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Contract No. 7124
Reinforcement at
Panel Point 3

Dear Sir:

Per our telephone conversation of July 7, 1971 we are enclosing herewith two (2) prints each of Sketch SK-2 showing the proposed reinforcing of the juncture pieces at Panel Point 3.

These layouts were developed in accordance with the conclusions of our meeting in Portland on June 30, 1971; namely, that:

(1) Remedial work would be by bolted splices.
(2) All reinforcing plates or splice material will conform to the requirements of ASTM A-588 steel.
(3) Reinforcing will be accomplished wholely within the tie-girder and arch-rib.
(4) Bolts will be 1-1/4" ϕ high strength bolts conforming to ASTM A 354 Grade BC.

Currently, we are in the process of checking these details; however, throughout the course of their development we have been in contact with the Contractor so that he is informed of the requirements for strengthening this joint and has initiated steps in that direction. By copy of this letter we are advancing these details to Murphy Pacific, Contractor for this project, in order that they may proceed with the shop detailing and procurement of the required material.

Should there be any questions, please do not hesitate to contact this office.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L. G. Silano
Project Engineer

LGS:A
cc:R. L. Schroeder
B. Cunningham
Murphy Pacific
W. S. Wilkes (FHA)
Roy Tokerud

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JUL 12 1971
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PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAT NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

I-405-8(17)
313
7276

March 12, 1971

Mr. Ivan D. Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

NOTED
A. E. JOHNSON

Re: Fremont Bridge
Erection Procedure

Dear Mr. Merchant:

This is to confirm yesterday's telephone conversation pertaining to our forthcoming trip. Please be advised that Mr. Hedefine would like me to accompany him out to Oregon, so I have rescheduled my trip to join him in Chicago and together we will proceed to Oregon. We will be arriving in Oregon on March 24, 1971 at 12:15 noon, on United flight 141.

As discussed, our plans are that we will be available on the 24th and 25th and, if need be, for whatever time is necessary to complete the review of the erection procedure.

With regards to hotel accommodations, two (2) singles for the nights of the 24th and 25th will be adequate and we will leave the particulars to whatever is convenient for you.

We look forward to meeting with you at this time.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L.G. Silano

LGS:mc

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MAR 16 1971
OFFICE OF
STATE HIGHWAY ENGINEER

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FORM S-30 (4-70)

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

March 11, 1971

SUBJECT: Fremont Bridge Erection
Contract 7276

To:

Mr. R. L. Schroeder
Metropolitan Engineer

METRO

Attention Mr. Edward L. Hardt
Metro Bridge Const. Engineer

RECEIVED
A. E.

This is to advise you that final arrangements have been made with our consultant, Parsons, Brinckerhoff, Quade & Douglas, to come to Portland and go over the entire erection procedure on the Fremont Bridge.

Mr. Silano and the man who has been doing most of the checking will arrive in Portland Tuesday evening, March 23. Mr. Al Hedefine, partner in charge, will not arrive in Portland until about noon on Wednesday. Mr. Hedefine and Mr. Silano will plan to spend the 24th and 25th of March in Portland and, if necessary, Friday, March 26.

Mr. Silano requested that we get two reservations at the Airport Motel for Tuesday night, March 23 and three reservations for March 24 and 25. I advised Mr. Silano that we would furnish transportation from the motel to the Metro office while he is in Portland.

At the earliest possible time Mr. Silano will have Murphy Pacific send us three copies of all approved construction details. These will come to Salem and will be made available to the Portland personnel as soon as they are received intthis office.

By copy of this letter I am asking Mr. Hardt to make the motel reservations, furnish transportation, and reserve the conference room for March 24 and 25, and possibly March 26 if necessary.

Please advise if there are any questions on the above.

ORIGINAL SIGNED
IVAN D. MERCHANT

Ivan D. Merchant
Bridge Engineer

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MAR 12 1971
OFFICE OF
STATE HIGHWAY ENGINEER

IDM:dh
cc A. E. Johnson
R. O. Cunningham
Herbert A. Schell, Jr.

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JUL 16 1970
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OREGON STATE HIGHWAY DEPARTMENT

I-405-8(17)303
7276

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

July 14, 1970

Parsons, Brinckerhoff, Quade & Douglas, Inc.
111 John Street
New York, New York 10038

Attention Mr. L. G. Silano
Project Engineer

Gentlemen:

Fremont Bridge
Contract 7276
Erection Details

Your letter of June 30 transmitted copies of seven drawings prepared for Murphy Pacific Enterprises by Earl and Wright, Consulting Engineers. The drawings received are 69500-C8, FE 3 Revision 1, FE 6, FW 2, FW 3, FW 4, and FE 8 Revision 1.

The falsework plan as detailed on drawings FW 2, 3, and 4 have been reviewed by Mr. Cunningham, by the City of Portland, and by the two effected Railroads. The details on these drawings appear to be satisfactory.

No comments are offered on drawing C 8 as this is entirely a design matter and we are leaving this to you to determine the competency of the proposal.

Drawing FE 3, Revision 1, covers side span erection - general arrangements. Our only comment on this drawing is that we still believe that the bottom of the column at panel point 5 should be pinned as are the columns at panel points 4 and 6 to eliminate erection stresses. It would be our suggestion that a pin be placed in the column just above the top of the floor beam and that the floor beam be only partially bolted to provide for erection deflections.

Drawing FE 6 - Center span off-site assemblies procedure.

Stage 1

A. With reference to the "initial bolts" referred to in the narrative at various splices should be clarified as to number and location.

NOTED
A. E. JOHNSON

B. Erection of deck sections should be checked and coordinated with girder erection to make sure that there is no overlap of deck section.

C. Item 10 in the narrative should be reversed. Tie girders should be adjusted to true position before splices are completely bolted and torqued.

Stage 2

Arch erection details indicate five falsework bents with a maximum rib length for erection of four panels. Deflection of the rib between falsework bents from the weight of rib plus bracing is of a significant amount. Each panel point of the arch must be placed in its true geometric position prior to decentering at Stage 3 and prior to the completion of steps 7 and 8.

On drawing FE 8 there is a point on terminology under Stage 2 and 4, Item 2, the word "shoes" should be substituted for the word "piers".

Inasmuch as the proposed erection procedure is considerably different from that contemplated during the design period, it is incumbent upon you as the design engineers to check the stresses throughout the structure during the various erection steps to make sure that final dead load stresses are consistant with those of the original design.

The State will be glad to consult with you on erection matters at any time.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

IDM:dh

cc A. E. Johnson
R. L. Schroeder
R. O. Cunningham

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JUL 14 1970
OFFICE OF
STATE HIGHWAY ENGINEER

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JUL 1 1970
FOR FILING

T. Edwards

OREGON STATE HIGHWAY DIVISION

I-405-8(17)303

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

7276

June 30, 1970

Parsons, Brinckerhoff, Quade & Douglas
111 John St.
New York City, New York 10038

Attention: Mr. Louis G. Silano

Dear Mr. Silano:

Proposed Erection Procedure
Fremont Bridge Superstructure
Fremont Bridge Section
Stadium Freeway
Multnomah County
Contract 7276

I have reviewed the contractors proposed erection procedure for the Fremont Bridge superstructure as set forth on Murphy Pacific Drawing Nos. 69500-ST 1 through ST 5, 69500-FE 2 through FE 4, 69500-C 1 through C 6 and 69500-R 1. I have the following comments on the proposed procedure.

On Drawing No. 69500-R 1 the details for the lifting lugs on the orthotropic deck are shown. At any slot through the deck plate where continuity of the deck plate is interrupted the edge of the deck plate should be beveled and a weld in the plane of the deck plate added. The continuity of the deck plate must be preserved.

On Drawing No. 69500-C 1 Detail 1-C 1 in Section D-C 1 it indicates one inch diameter bolts at less than the allowable pitch specified on contract Drawing Sheet 16.

I am concerned about the details at panel 5 as shown on Drawing No. 69500-C 4. I believe that further study should be given to develop a pin connection in the base of the column at panel 5 during erection. This could be accomplished by inserting a pin in the column above the floor beam. A pin connection could also be obtained within the depth of the floor beam by inserting a pin in the column and placing sufficient bolts at the floor beam in the plane of the pin to carry the dead load of the floor beam. It may be necessary to cope the bottom inside corner of the floor beam in order to clear the pin. Under sized bolts near the top of the floor beam to help stabilize the floor beam may be in order.

RECEIVED
JUN 30 1970
OFFICE OF
STATE BRIDGE ENGINEER

The contract drawings on Sheet 36 call for a 10 inch opening for an 8 inch pipe in the cross frame at panel 14. This opening is not shown on the details for this cross frame on Drawing No. 69500-C 3.

On Drawing No. 69500-C 7 Item 2 under the General Notes should be revised to read "All stiffeners added should be of the same grade of steel as the web".

I have no comments on the stresses due to the erection scheme as called out on Drawings 69500-ST 1 through ST 5 as it is presumed these are being checked in your office and this office does not have the background data to comment on this aspect of the proposed erection scheme. I am retaining the single set of drawings for reference. At such time as all erection details are finalized and approved the usual distribution should be made.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

WJH/ag

cc: T. Edwards
A. E. Johnson
R. O. Cunningham

RECEIVED
NOV 21 1969
FOR FILING

I 405-8 17 303
~~I 5 11~~ 7276

November 20, 1969

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
Box 300
Salem, Oregon 97308

Re: Your File 08-35.6
Oregon Project I-405-8(17)303
Fremont Bridge Castings

Dear Sir:

Your memorandum dated November 13, concurring in a change in specifications for the castings of the Fremont Bridge, has been received. This change was requested by Murphy Pacific Enterprises by their letter of November 3, of which you have a copy.

I am enclosing a copy of a letter from our consultants (Parsons, Brinckerhoff, Quade and Douglas) dated November 10 to Murphy Pacific Enterprises on this matter. Your attention is called to the consultant's letter, concurred in by the State, requiring a more restrictive quality of casting in the hub area than concurred in by your November 13 memorandum. We believe the more restrictive requirement as proposed by the consultant can be obtained by the fabricator and will result in a higher quality of casting.

You will be advised of the monetary considerations due to the specification change as soon as they are finalized with the Murphy Pacific Enterprises.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant
A. E. Johnson (enc.)
R. O. Cunningham (enc.)

IDM:jf ja

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Bureau of Public Roads
Box 300
Salem OR 97308

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon
Attention: Mr. I. D. Merchant

DATE: November 13, 1969

In reply refer to: 08-35.6

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(17)303
Fremont Bridge Castings

We have reviewed your telephone request and a copy of the contractor's November 3 letter for a change in the casting specifications on the subject project. Mr. Merchant requested our concurrence in this change. This will alter the contract addendum Revision Letter No. 3 dated June 17, 1969. The extent of Public Roads approval is as follows:

Description	Original Contract Specification	BPR Approved Change
Magnetic Particle Inspection		
Type 1 Linear Discontinuity (Hot tears & cracks)	None permitted	3/8" or less*
*At the pin Seat and 6" from the edges of the Seat	None permitted	None permitted
Type 11 Shrinkage	Degree 3	Degree 4
Radiographic Inspection (ASTM Designation E280-69)		
1.4.3 Category C Shrinkage		
Type 1	Severity Level 1	Severity Level 3*
*At the pin Seat and 6" from the edges of the Seat	Severity Level 1	No change
Type 11	Severity Level 2	No change
Type 111	Severity Level 3	No change
1.4.4 Category D		
Hot tears	None permitted	Severity Level 4*
Cracks	None permitted	None permitted
*At the pin Seat and 6" from the edges of the Seat	None permitted	None permitted

NOTED

(more)

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

The intent of the asterisk is to require more control where design and service requirements would be critical. It is felt that Magnetic Particle and Radiographic Inspections should be consistent in this area. In such an evaluation consideration should be given to such factors as pressure, temperature, section thickness, applicable design, safety factors, vibration, shock, resistance to corrosion, and the involvement of dangerous gases or liquids.

It would appear that with the above changes some price adjustment should be available.

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OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
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NOV 19 1964
OFFICE OF
STATE HIGHWAY ENGINEER

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
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ENGINEERS

November 10th, 1969

Mr. Jay P. Murphy
Contracting Manager
Murphy Pacific Enterprises
4300 Eastshore Highway
Emeryville, California

Re: Fremont Bridge
Fixed Shoe Castings

Gentlemen:

Your proposed request to amend the requirements of Section 410-3.60 of the Special Provisions and subsequent addenda pertaining to Bid Item 9 "Castings and Forgings," contained in your letters dated October 24, 1969 and November 3, 1969, has been carefully reviewed. Your requested changes involve the minimum acceptable standards and are as follows:

Radiographic Inspection

1.4.3 Category C - Shrinkage
Type I - Severity Level 3

1.4.4 Category D - Hot Tears and Cracks
Cracks - none permitted
Hot Tears - Severity Level 4

Magnetic Particle Inspection

Type I Linear Discontinuity
(Hot tears and cracks) - 3/8" or less permitted ✓

Type II Shrinkage - Degree 4 ✓

NOTED
IVAN G. MERCHANT

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OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
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The revisions proposed by you are acceptable to us and have been cleared with both the State Highway Department and the Bureau of Public Roads with the following stipulations:

(1) For Magnetic Particle Inspection - Type II Shrinkage that the original discontinuity severity Degree 3 be adhered to in the hub (pin) area of the castings and that Degree 4 serve as acceptance in all other areas.

(2) That any and all monetary savings accrued from these changes be credited to the State of Oregon.

Would you kindly acknowledge the modification contained in Item 1 above and also submit the necessary information referred to in Item 2 in order that approval may be secured.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G Silano

L.G. Silano

LGS:mc

cc: Ivan Merchant
R.O. Cunningham

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OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
AM NOV 13 1969 PM
7,8,9,10,11,12,1,2,3,4,5,6

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MAY 2 - 1969

FOR PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
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ENGINEERS

I-405-8(17)303
7276

April 29, 1969

Mr. Ivan D. Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Dear Mr. Merchant:

At your suggestion we contacted Mr. W. S. Wilkes, Chief, Bridge Division of the Bureau of Public Roads to resolve the unanswered items 4 and 5 of their latest comments. There is now no misunderstanding as to the particulars of these items, as I explained to you in my telephone conversation yesterday. We have agreed to make several small revisions to the Stress Sheet No. 4 and 6 in order to satisfy the Bureau and expedite the advertising of this contract. We are enclosing one (1) print of both drawings with the necessary changes marked in red.

The wind load treated as a moving live load involves the laterals of the arch in the vicinity of the center of the main span but since these are minimum sections it has no effect on member sizes, connections, etc.

The design of Floorbeam B5103 was controlled by DL+W which is indicated on Sheet 6. We have added to the Stress Sheet the DL + LL + Imp stresses at the centerline of the beam for informational purposes.

The Bureau through their local office will promptly confirm our discussions in order that you can proceed with your intended advertising date.

Very truly yours,
PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano
L. G. Silano
Project Engineer

LGS:rk
Encls.
cc: Mr. T. Edwards, Asst. State Highway Engineer

NOTED
TOM EDWARDS

RECEIVED
MAY 1 1969
OFFICE OF
STATE HIGHWAY ENGINEER

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APR 14 1969
FOR

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111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
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ENGINEERS

I-405-8(17)303
7276

April 9, 1969

JP

Mr. Ivan D. Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Dear Mr. Merchant:

We have for some time been studying the problem of non-destructive testing of the partial penetration groove welds of the trapezoidal deck plate stiffeners to the deck plate. After discussions with knowledgeable people in the industry, we have concluded that:

(1) Radiograph inspection would be inconclusive since it would be difficult to distinguish between the open root or cracks in the toe of the weld.

(2) There seems to be a diversification of opinion among the "experts" concerning the testing of these welds ultrasonically. There are those who envision no problems as to the determination of either penetration or weld quality, while on the other hand there are those who take a dim view and are dubious about the results. In either event it can be concluded that if these welds could be tested ultrasonically, it will be difficult, and furthermore, the administration of this testing will be more difficult and argumentative.

The situation involving the present detail is twofold in scope. First, we must be able to verify the 80% minimum penetration and, secondly, of equal importance is to have some reasonable assurance as to the quality of the welds.

Verification of penetration can be accomplished by prequalifying the weld before fabrication commences by the use of prototype samples. Checks during fabrication can be instituted by utilizing run-off tabs at the start of each shift for each machine engaged in production. This can all be handled in accordance with the enclosed specification procedure.

ROUTED JOM EXPRESS

To test for weld quality, we would have to rely on tight inspection control which would be limited to visual inspection to insure good fit up and strict adherence to the prequalification procedure. In addition, we would rely on magnetic particle inspection limited to a minimum of 5% of the welds to check for any surface cracks or other irregularities.

Since there is a strong feeling among some experts familiar with non-destructive testing that these welds can be successfully tested for both penetration and quality by the use of ultrasonics, we believe it advisable that the specifications be so worded that the State reserves the right to test these welds ultrasonically in the event your testing agency can convince you of this fact. This option to the State is included on Page 30B of the enclosed revised specification.

These welds are stressed primarily by local loads in two ways. For longitudinal flexure of the stiffener they transfer the shear due to longitudinal bending. In the transverse direction the flexural deformation of the deck plate causes the ribs to participate in the load distributing action of the deck plate. The participation of the ribs is dependent on their torsional rigidity.

With relation to weld quality in the transfer of shear due to longitudinal bending, we would not be too concerned with some minor flaws; however, in transverse bending the quality of the welds is of concern even though the partial penetration weld is lightly stressed. As a precaution, to safeguard against the possibility of some minor undetected defects, we would recommend strengthening the weld by the addition of a fillet as shown on the accompanying sketch of Detail "A". This weld can still be accomplished by a single pass weld at a very nominal increase in cost.

If you have any further questions pertaining to this matter, please do not hesitate to contact this office.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano

L. G. Silano
Project Engineer

LGS/cc
Encls.
cc: Mr. T. Edwards w/encls.
Assistant State Highway Engineer

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APR 11 1969
OFFICE OF
STATE HIGHWAY ENGINEER

Fremont Bridge Section

All welders and welding operators, even though already prequalified for welding ASTM A36 and A441, must prequalified for welding A588 steel by satisfactory performance of all the tests set out above for procedure qualification (i.e. Reduce Section Tension & Fillet Weld Tests shown on Figs. I and II).

All welders, welding operation and procedure qualification for welding deck plate stiffenors to deck plates shall be prequalified under this contract.

No prequalification of welders or welding operators for welding A588 steels by certification of work on prior projects will be accepted.

All tests of procedure and welder and welding operator prequalification specimens will be made by the State at no expense to the contractor.

410-3.22 (601) General. Inspection of welding of all steels, except A514 steel shall be in accordance with the Standard Specifications and as modified herein. For inspection of A514 steel refer to additional requirements herein.

WELDING AND INSPECTION OF DECK PLATE STIFFENERS TO DECK PLATES

The welded connection of deck plate stiffeners to deck plates shall have a minimum penetration of 80% at the joint as shown on the plans, with burn through kept to a practicable minimum. The contractor shall prepare the joint as necessary to secure the required penetration. Procedure qualification of this joint shall be required as hereinafter specified.

All welding procedures to be used in welding deck plate stiffenors shall be subject to joint qualification tests.

Prior to start of actual shop welding operations, the Inspector and Welding Forman shall hold a conference to insure that agreement has been reached regarding details of the procedure and sequence of welding to be followed, the status of qualification of weldors and approval of electrodes and other materials and equipment to be used.

410.3.22 (802) Types of Tests and Purposes. add as follows:

(C) Deck Plate Stiffiner to Deck Plate Weld.

(1) Test Specimen (for Penetration)

410.3.33 (804) Position of Test Welds. add as follows.

(C) Deck Plate Stiffiner to Deck Plate Weld

(1) Position described in Welding Procedure Specification

410.3.22 (807) Test Specimens - Number Type and Preparation. add as follows:

(C) Deck Plate Stiffens to Deck Plate Weld

(1) A sample joint using the same materials and having the same cross section as the joint to be used in construction and a length of at least three feet shall be welded with the type of welding machine, electrode, flux, current, arc voltage and speed of travel specified in the welding Procedure Specification. Two 1" wide transverse test specimen shall be cut from the sample at 1/3 points of the welded length and one surface of each specimen shall be ground smooth and macroetched to demonstrate that the requirements of penetration will be met.

At the beginning of each production shift, a test sample shall be prepared which is identical in all respects to the joint being tested. The joint shall be welded on runoff extensions at least one foot in length with the electrode, flux and machine settings used in production, one test sample being required for each machine in use. One surface of each sample shall be machined and macroetched to demonstrate that penetration requirements are being met. Contractor may proceed with the above work at his own risk until results of the tests are determined. Indicated corrections shall be made and a new test sample shall be prepared and submitted for approval. Production may not be resumed until the revised procedure is approved by the Engineer.

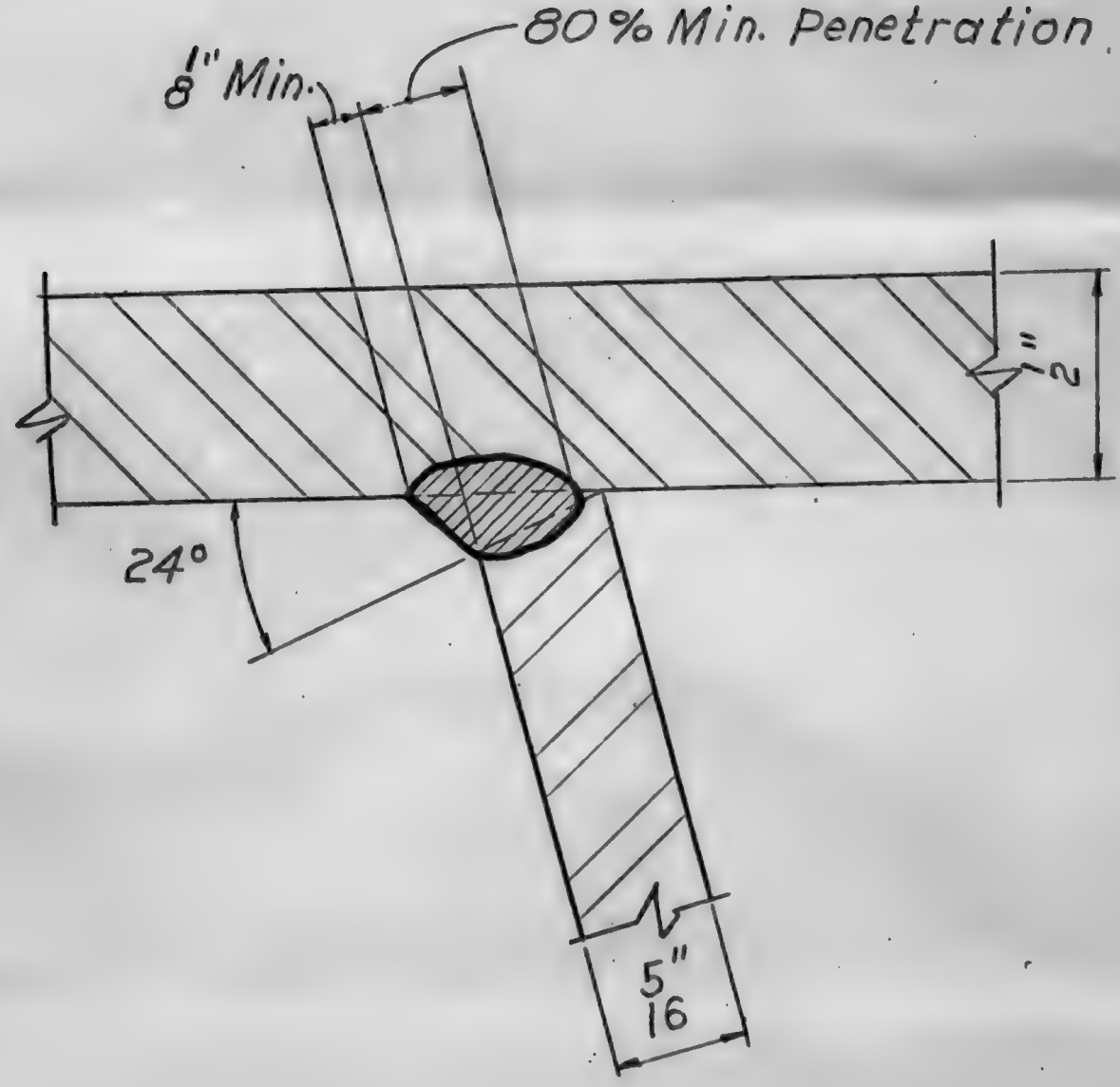
Add to Article 609, Magnetic Particle Inspection.

609 (a) Magnetic particle inspection of the deck stiffeners to deck

plate welds will be required and will be furnished by the State with no direct cost to the Contractor, except as hereinafter specified. The Contractor shall give the Engineer advance notice of the date on which the material will be ready for inspection. The Contractor shall furnish the power supply for the equipment and the labor and equipment that may be required to position the steel for inspection and, in the field, such scaffolding and labor as may be required to assist in inspection of the welds for which magnetic particle inspection is specified. One foot in every twenty feet of length will be magnetic particle inspected.

The state also reserves the right to test these welds ultrasonically. A minimum of 5% of the 80% penetration welds shall be inspected by ultrasonic testing.

410-3.24 Facing of Bearing Surfaces. The surface finish of bearing plates and other bearing surfaces shall comply with this paragraph and as shown on the Drawings.



DETAIL "A"

Mr. Edwards

RECEIVED
MAR 31 1969
FO...

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
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ENGINEERS

I-405-8(17)363
(10)
7276

Sp

March 18, 1969

Mr. Ivan D. Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge Superstructure
Engineer's Estimate

Dear Mr. Merchant:

We have completed our engineering estimate of the construction cost for the main span of the Willamette River Crossing in Portland, Oregon, known as the Fremont Bridge.

As you already know, the materials and the quantities required for this estimate appear as Items No. 1 through 10, and all are on the basis of a lump sum except Item No. 7, Parapet Rail and Item No. 8, Epoxy Asphalt Paving, which appear as unit prices. In the estimate we have tried to make some allowance for escalation up to but not beyond June 30, 1969.

At the present time we do not know the proposed construction schedule for the approaches to the main span. The availability of the approaches for access to the main span may have some effect upon bid prices.

The attached estimate of cost for the construction of the superstructure of the Fremont Bridge is shown as Twenty Seven Million Five Hundred Ninety Seven Thousand Three Hundred Forty Dollars ($37,597,340).

Should there be any questions or comments, please communicate with us quickly.

NOTED
TOM EDWARDS

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Alfred Hedefine

Alfred Hedefine

AH/mr
enclosure
cc: Mr. T. Edwards w/encl.

RECEIVED
MAR 20 1969
OFFICE OF
STATE HIGHWAY ENGINEER

To accompany our letter of March 18, 1969.

SUPERSTRUCTURE
FREMONT BRIDGE SECTION
STADIUM FREEWAY HIGHWAY
MULTONOMAH COUNTY

ENGINEER'S ESTIMATE

Item No.	Item	Unit	Quantity		Unit Price	Amount
			Neat	Round		
1	Structural Steel	L.S.				24,342,500
2	Miscellaneous Metal	L.S.				271,500
3	Castings and Forgings	L.S.				1,182,000
4	Suspender Strand	L.S.				323,750
5	Class A Concrete	L.S.				586,500
6	Metal Reinforcement	L.S.				171,700
7	Parapet Rail	L.F.	8639	8639	10.00	86,390
8	Epoxy Asphalt Paving	Ton	2290	2400	145.00	348,000
9	Sign Structures and Signs	L.S.				35,000
10	Electrical Work	L.S.				250,000

Total Cost = $27,597,340

RECEIVED
MAR 27 1969
FOR

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

I-405-8(17)303
7276

March 14, 1969

Mr. Ivan D. Merchant - Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge - Superstructure
Supplemental Bureau Comments

Dear Mr. Merchant:

We have reviewed the additional comments by the Bureau of Public Roads dated February 19, 1969 forwarded with your letter of February 28, 1969, and have the following to offer:

1. Sheet 3

It was our intention in the Material paragraph of the General Notes to note the types of materials intended for use on this project.

For high strength low-alloy structural steel conforming to ASTM - A441 or A588, we have used the following design criteria:

a) ASTM - A441 for strength properties: fs = 27,000#/□" for plate thickness up to and including 3/4 inch.

b) ASTM - A588 for strength properties: fs = 27,000#/□" for plate thickness over 3/4 inch.

c) For corrosion resistance properties for all plate thickness, ASTM - A588.

The important consideration, and one that concerns us all, is that the material designation for each and every member be clearly noted on the detail drawings and the stress sheets. This is what we have strived to attain and believe we have accomplished.

NOTED
TOM EDWARDS

2. Sheet 3

Standard practice for the usual range of spans covered in AASHO when designing bracing members controlled by wind alone is to design for 100% basic unit stresses. The wind forces adopted in AASHO for superstructure design are predicated on wind velocities of 100 M.P.H.

For larger structures, so many other variables enter into the picture that in order to effect economy in design and to be able to design with any degree of certainty or reliability for wind forces it is usually advisable to conduct wind tunnel tests on sectional models.

The results of the wind tunnel test on the sectional bi-level roadbed model for this structure indicate that for a wind velocity of 120 M.P.H. the maximum drag component is approximately 52 lb/ft^2, while the arch-rib maximum drag component for the same velocity is 116 lb/ft^2. The corresponding forces used in the design are 75 lb/ft^2 for the roadway and 200 lb/ft^2 for the rib (100 lb/ft^2 for each rib). The force system adopted and used in the design would correspond to wind velocities in excess of 150 M.P.H.

It is not unusual when dealing with the probability of experiencing wind of the intensity and velocity adopted for this design to permit some overstress. For the particular conditions in question (i.e. wind only) we would permit a 15% overstress; however, from practical considerations the minimum sections adopted for the bracing requirements of the arch-rib satisfy the basic design unit stresses. If you feel it advisable to revise the design unit stress for the K-brace under Combined Loads to 100% basic unit stress, we would have no objection.

3. Sheet 4

This structure was analyzed as a space frame for wind forces utilizing a "Univac" 1107 electronic computer. Two cases of wind loading were considered:

(1) Case I - Loading the entire center span from Panel Points 14 to 14'.

(2) Case II - Loading the entire structure from Panel Points 0 to 0'.

Wind load may not necessarily be uniformly distributed along the entire structure, but it would certainly be present to some degree over the full length. The advisability of treating the wind load as a moving live load for long span bridges is certainly open to question. We did, however, examine the effects of treating the wind load as a moving live load in the main span. This condition would certainly control the design of the laterals in the vicinity of the center of the main span. The minimum sections utilized for the bracing requirements of the main span satisfy the governing forces which exist in the vicinity of the portal. The force system governing the design in the vicinity of the portal is a more severe condition than can be obtained elsewhere in the span by treating the wind force as a moving live load.

The forces shown for Arch Lateral Bracing on Sheet No. 4 are the accompanying forces for Case II which controls the design of the laterals in the critical regions.

4. Sheet 6

The control for the design of Floorbeam FB103 is the combined loading case Group II AASHO, consisting of DL+W @ 125% basic unit stress.

Floorbeam FB103 functions primarily as a portal strut for the lower arch bracing system and transmits the wind reaction from the lower deck suspended roadway to the bearings. The floorbeam functioning as part of the overall portal frame develops dead load bending moments at the joints, which in combination with the wind moments control the design.

We have listed in Stress Sheet III on Sheet No. 6, under Floorbeam FB103, the stresses associated with the loading case controlling the design. No attempt was made to tabulate stress conditions which do not influence the design.

5. Sheet 15

The revised junction details and the related welding associated with this revision submitted to you on February 14, 1969 answer the question raised here.

6. Sheet 16

The wind chord connection to the arch rib at Panel Point 4 shown on Sheet No. 16 was detailed as a flexible connection using 6 x 6 angles. This will function adequately at this location; however, we agree that the use of a pinned and slotted detail similar to that at Panel Point 13, Sheet No. 24, will maintain uniformity in detailing. The necessary change is shown in red on the enclosed print of Sheet No. 16.

7. Sheet 29

The Plans and Specifications call for the material of the orthotropic deck consisting of the deck plate and the trapezoidal stiffeners to be fabricated from corrosion-resistant steel conforming to ASTM designation A588.

The Bureau of Public Roads questions the necessity for using ASTM - A588 since ASTM - A441 is available in the same stress level at a reduced cost.

The decision to use a corrosion-resistant steel for the deck plate dates back to the original report work on "Alternate Designs for the Fremont Bridge" dated July 1965 and April 1966. This decision emanates from past correspondence between Mr. R. L. Porter, Oregon State Highway; Mr. M. H. Quade, Parsons, Brinckerhoff, Quade & Douglas; and Mr. E. L. Erickson, Bureau of Public Roads.

The reasons for using a corrosion-resistant material are a matter of record. Suffice it to say that we cannot at this time advance any further claim that would materially alter or change this decision.

The stress requirements for the deck plate trapezoidal stiffeners will be satisfied if fabricated from material conforming to either ASTM - A441 or ASTM - A588. You may recall that originally we contemplated using A441 stiffeners with the interior surfaces painted. A later evaluation disclosed that a cost savings would be effected by utilizing a corrosion-resistant steel and eliminating the interior surface painting.

The Contract Drawings and the Specifications were completed

reflecting the decision to use ASTM - A588 steel eliminating the interior painting.

8. Sheet 29

Presently, the size of the hand holes in the ribs at splice locations are 6" x 14". How much of a reduction in this size can be accomplished without making it impractical to perform the necessary bolting of the splices is questionable. Further, we don't know what good will be served or for that matter what advantage will be gained by doing this.

9. Flexural Fatigue Tests

Your telephone request concerning the flexural tests of the paving material formed the basis for some subsequent informative disclosures. Most of this work on this subject was and is currently being carried out at the California Division of Highways' Materials and Research Dept. for the San Francisco Division of Bay Toll Crossings.

Flexural fatigue tests were a requirement of the Specifications for the San Mateo-Hayward and the San Diego-Coronado Bridges. This work was carried out under the direction of Mr. Chuck Sien and not by Fred Frondriest of Battelle Institute as we had previously indicated.

A very interesting paper on this subject, entitled "Flexural Tests of Paving Materials for Orthotropic Steel Plate Bridges", written by C. T. Metcalf, concerns itself with a test program to investigate the properties of designated materials as an aid to the selection of the paving system for the San Mateo Bridge.

The test samples are fabricated to represent the deck panel. The object is to reproduce in the laboratory a stress in the extreme fiber of the steel plate in contact with the overlay material, of the same magnitude as would exist in the prototype under the action of a wheel load.

With relation to the test samples for the Fremont Bridge, we would require a cyclic load for flexure sufficient to produce a stress of 18,000 psi in the extreme fiber in contact with the epoxy asphaltic concrete. The load should be applied at

a rate of 5 cycles per second. Specimens should be capable of withstanding one-million cycles of repeated loading without cracking or other failure of the surfacing.

To produce a tensile strength of 18,000 psi in accordance with the testing apparatus and procedure specified in ASTM - C293, the Special Provisions Page 74 should be modified to apply a repetitive loading of 1000 pounds at five cycles per second to the center of the test specimen symmetrically supported on steel supports at twelve-inch centers.

An interesting point brought out by Mr. Sien concerns itself with the requirement of designing the deck plate for a live load deflection to span ratio. He indicated that they would not be concerned with using 1/300 and actually attempted to do this on the San Diego-Corinado Bridge. The use of a minimum 3/8" deck plate for the San Diego Bridge produced a ratio of ± 1/500. Flexural Fatigue tests on the epoxy asphalt concrete samples for this bridge were stopped after exceeding two-million cycles. Longer fatigue life may be attributed to improved gradation of the aggregate used in the mix which plays an extremely important role in fatigue properties.

10. Painting Specifications

In a recent telephone conversation you indicated your intention to revise the General Requirements of Article 414-2.5(c), Inorganic Zinc Silicate, by eliminating Type I, Class 3, Military Specification MIL-P-23236 (Ships) and substituting Naval Ships Technical Manual, Chapter 9190. You explained that the reason for this change was to provide a more restrictive Qualified Products List to obtain products more readily suited for field touch-up.

We have in the interim investigated the ramifications of this change and how it relates to this structure. We would like to offer the following:

1) Chapter 9190, Naval Ships Technical Manual, covers painting procedures to be carried out aboard a ship. One section of this general painting manual is devoted to the subject of Zinc Silicate Coatings for "Tank Surfaces." This

section covers Inorganic Zinc Silicate products qualified under Military Specification MIL-P-23236 (Ships) and gives a QPL (Qualified Products List) showing numerous approved manufacturers.

The test procedures under MIL-P-23236 (Ships) to qualify a Zinc Silicate on the QPL list are intricate. They involve manufacturer's laboratory data, Navy Department laboratory chemical evaluation findings, Navy laboratory panel tests, and an "in-service evaluation." The Zinc Silicates are tested for basic corrosion protection, chemical resistance and salt water immersion.

As part of this overall evaluation, the material is tested under "touch-up" procedures in order to insure that it can be easily repaired after initial application in the event it becomes necessary.

The use of MIL-P-23236 (Ships) to qualify zinc materials was specified on many large projects. Most noteworthy of these, to name but a few, are the San Mateo-Hayward Bridge, the BART Project in San Francisco, and the Golden Gate Bridge.

Any number of the Zinc Silicate materials on the QPL-23236 list have past histories of proven service performance. A prime consideration for recommending and including in the Special Provisions the requirement that the QPL-23236 list be utilized as a "qualifying" medium was to be certain that only time-proven Zinc Silicates be considered for this project.

Another consideration for our recommendation can be attributed to the decision requiring faying or contact surfaces to be coated with inorganic zinc. It is not our intention to delve into the advantages derived from this procedure as this was done on numerous occasions, but rather to stress the underlying considerations for this decision. Our decision was influenced by the work of W. H. Munse at the University of Illinois on Static and Fatigue Tests on Bolted Connections coated with Rust-Ban 191, Dimetcote 4, and the work of Rivera and Slutter at Lehigh University for the Carboline Company on Carbo Zinc 11.

From the conclusions of these test programs it appears that bolted connections in which the contact surfaces have been coated with the above-listed manufacturer's products develop a friction resistance comparable to that of sandblasted or rusted surfaces. These inorganic Zinc Silicate coatings meet the requirements of Type I, Class 3 Military Specification MIL-P-23236 and are included in the Qualified Products List QPL-23236.

We also considered prior to recommending the Qualified Products List 23236 the requirements for the orthotropic deck paving system. We specified under Surface Requirements in Paragraph 3.3, Page 73 of the Special Provisions, and also Paragraph 3.3(b), Page 74, the adhesion requirements of the surfacing material to the painted steel deck plates.

You may recall that Rust-Ban 191 was the inorganic zinc prime coat used in conjunction with the epoxy asphalt concrete paving system on the San Mateo-Hayward Bridge. This manufacturer's product is qualified on the QPL-23236 list.

Another section of Chapter 9190, Part 3 - Surface Ships, covers Zinc Silicate Coatings for application to "Exterior Surfaces." This section is far less stringent in its test requirements, which may be due mainly to the fact that these materials do not have to withstand as severe a service condition as do coatings for tank surfaces. It is important to note that there is no test for ease of "touch-up" for materials qualifying for 9190 "Exterior Surfaces", and there should be no misunderstanding on this point.

The requirement of MIL-P-23236 (Ships) to qualify inorganic zinc coatings for "Tank Surfaces" when applied to bridge structures has proven successful in the past. While it is true that a few of the products which qualify for "Tank Surfaces" also qualify for "Exterior Surfaces", there is no guarantee that all "Exterior Surface" Coatings will qualify for "Tank Surface" coatings. The corrosive atmosphere associated with marine structures makes it mandatory to utilize coatings with satisfactory performance history. The painting specification which was prepared in consultation with you for the Fremont Bridge was proposed

after considerable study and is based upon recent experiences with the newer paint systems. We recommend that the original requirement of MIL-P-23236 (Ships) be retained in the specifications to qualify the inorganic zinc coating.

11. We are also including herewith prints of Sheet Nos. 29 and 36 with the revisions we discussed pertaining to the typical cross-frame and the addition of the back-up bar for the longitudinal deck plate welds.

We believe that we have provided you with sufficient information and advice in answer to the Bureau of Public Roads' comments. If we can be of any further assistance, please do not hesitate to call.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano

L. G. Silano
Project Engineer

LGS/cc
Encls.

cc: Mr. T. Edwards
Assistant State Highway Engineer
Oregon State Highway Department

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MAR 17 1969
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ENGINEERS

I-405-8(17)303
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February 26, 1969

Mr. Ivan D. Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Dear Mr. Merchant:

In our letter to you dated February 14, 1969 transmitting the final plans and specifications for the Fremont Bridge, we indicated that we were in the process of drafting a reply to some questions which had remained unanswered. With the submission of the following, we believe we will have covered all the outstanding items remaining from the design phase of this project:

1. The bevel of the 80% penetration welds for the closed trapezoidal plate stiffeners was questioned by the Bureau. They recommended that the plates be made flush with the deck plate. We have been in consultation with several fabricators and have concluded that this is undesirable if the 80% minimum penetration must be maintained. To insure 80% minimum penetration welds it is desirable to use groove welds. In order to effect economy in welding, we have reduced the bevel from 50° to 25° without sacrificing the minimum desirable penetration

2. We have concluded from the results of our investigation concerning the deck plates that probably the deck panels will be fabricated from sheared plates. Sheared plates are generally available in widths up to 120 inches and in 50 foot lengths for the range of plate thicknesses applicable to this job.

   We were able to determine that sheared plates have been used on similar orthotropic decks. Sheared plates, you may recall, are rolled between straight horizontal rolls with all edges trimmed. The slab used for these plates is generally rolled in two directions or "cross-rolled" where the same physical properties are

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TOM EDWARDS

desired in both directions. We, therefore, have not specified a particular preference for laying these plates, but rather have left this to the fabricator's ingenuity.

From the practical standpoint, it appears that in order for a contractor to be economically competitive the deck panels would have to be fabricated from Sheared Plates; however, this does not guarantee that universal mill plates could not be used, especially since this contract is now open to foreign competition.

We, therefore, would advise that the use of "Sheared Plates" for the deck panels be specified in the Special Provisions. This should be included under Materials Item 410-2.1 - Structural Plates, Shapes and Bars, on page 25, by inserting at the bottom of the page the following sentence:

> "The orthotropic deck panels shall be fabricated from Sheared Plates."

3. We believe, in the case of the trapezoidal deck plate stiffeners, that they could be fabricated from either "sheared plates" or "universal mill plates."

Universal mill plates are rolled between straight horizontal and vertical rolls in which the width is controlled. Only the ends are trimmed.

We have been able to ascertain that in several other orthotropic bridges built in this country, the trapezoidal stiffeners were cold bent from "universal mill plates" with no adverse effects.

We would like to call your attention to the fact that we have specified in Article 410-3.30, Bent Plates, page 38 of the Special Provisions, that "universal mill plates", for the case of trapezoidal stiffeners only, be exempt from the restrictions of this article.

4. The Bureau had requested in their memo dated July 31, 1968 to you that we take under advisement the thickening of the deck plate from 1/2 inch to 9/16 inch to provide more adequate support for the wearing surface. This, they state, was done in the case of the Poplar Street Bridge.

The usual determination of deck plate thickness is based on a

specified deflection of the plate under a wheel load unless stress considerations require a thicker plate. This live load plus impact deflection should not exceed 1/300 of the spacing of the deck plate supports. For the case of the Fremont Bridge with a rib spacing of 12" and a plate thickness of 1/2 inch, this live load deflection to span ratio is 1/1200.

Our investigation into several of the more prominent orthotropic bridges built or now under construction in this country is as follows:

	Deck Plate Thickness	Spacing	Ratio of Deflection to Span
Poplar St. Bridge	t = 9/16"	13"	1:1350
Port Mann Bridge	t = 7/16"	12"	1:800
San Mateo-Hayward Bridge	t = 5/8"	15"	1:1200
San Diego-Coronado Bridge	t = 3/8"	12"	1:506
Fremont Bridge	t = 1/2"	12"	1:1200

These calculations are based on an AASHO wheel load and do not reflect any increased stiffness due to composite action of the wearing surface.

5. With reference to the specifications for ASTM - A588 Steel, we deemed it advisable to include in the Special Provisions the requirement that the contractor shall make Charpy V-notch impact tests for informational purposes only. The complete provisions of this requirement can be found on page 25 of the Special Provisions.

   The requirement for Impact Tests was introduced by the Bureau in their October 4, 1966 Circular Memorandum on the "Use of Modified ASTM A441 Steel", and we felt its inclusion as part of the requirements for ASTM - A588 steels is warranted.

   The supplementary requirement concerning Impact Properties of ASTM - A588 steel was taken from the "Proposed AASHO Material Specifications for Steel Conforming to ASTM Designation A588-68."

The second paragraph on page 25 of the Special Provisions is the requirement that the material supplier shall furnish satisfactory impact test data on previously produced steel for approval prior to ordering steel for this order. If the supplier does not conform to this requirement, then and then only will the impact test data required under paragraph one of this supplementary requirement serve as acceptance for the steel instead of for informational purposes only. The basis for acceptance shall be the requirement that at least 95 percent of the Impact Tests at 40° F shall have values of not less than 15 foot-pounds.

The third paragraph relates to the case where the supplier has submitted and received approval of satisfactory impact test data on previously produced steel, but is unable to produce steel in this order which in more than 95 percent of the tests meets the requirements of paragraph one. In this case, the supplier must initiate changes to improve notch toughness before furnishing this same material for future orders. However, the failure to meet the impact properties required for information purposes only is not cause for the rejection of that order.

The difference in price for steel with impact values for acceptance and steel with impact values for informational purposes only is considerable. This supplementary requirement is desirable as it affords maximum security for a minimum expenditure. It is more of a necessity now that foreign steel will be permitted in this contract.

6. The shear connector spacing for the composite beams has been revised in accordance with the latest AASHO Interim Specifications, 1966-1967.

7. With reference to the question you raised on Sheet No. 23 of the contract drawings wherein you asked why the difference in column connections: We used at the connection of the columns to the arch ribs a bent angle to transfer the transverse wind shear for those columns where the shear force was appreciable. Where this transverse shear is negligible we omitted the bent angles and rely on the vertical gussets to transfer the shear.

8. Your question concerning the allowable stresses for the arch

rib sections, shown on Stress Sheet II, Sheet No. 5, can be explained as follows:

The allowable compressive stress for the ASTM - A514 concentrically loaded arch ribs was based on the following equation:

$$f_{allowable} = 36{,}000 - 2.4 \left(\frac{L}{r}\right)^2$$

The cross section of the rib was selected so that the individual plates offer the same resistance to local buckling as the whole member presents to the primary column (rib) buckling. To accomplish this we equate the critical column stress to the plate buckling stress and arrive at the equivalent column slenderness ratio K L/r

$$\left(K \frac{L}{r}\right) \text{equivalent} = 1.65 \left(\frac{b}{t}\right)$$

For the particular rib section 15-16 shown on Stress Sheet II, Sheet No. 5, with 46" x 2" plates, we obtain:

$$\left(K \frac{L}{r}\right) \text{equivalent} = 1.65 \left(\frac{46}{2}\right) = 37.9$$

Substituting into the formula for allowable compressive stress, we obtain:

$$f_{allowable} = 36{,}000 - 2.4\ (37.9)^2 = 32{,}500\ \#/\square"$$

The allowable stresses for rib sections 3 thru 10 and 14 thru 24 were controlled by local buckling strength of the plate elements.

The allowable stresses for rib sections 10 thru 14, however, were controlled by overall buckling strength of the rib.

9. The design for the lower deck hanger is controlled by AASHO Group III loading at 125% basic stress. The critical section of the hanger is located at the connection to the tie girder where the stress is a function of combined axial tension and bending in two directions.

$$f = \frac{P}{A} + \left(\frac{M}{S}\right)_{long} + \left(\frac{M}{S}\right)_{trans.}$$

where f = extreme fiber stress

$$f = \frac{454}{62.9} + \frac{1930}{164} + \frac{3760}{706} = 7.21 + 11.78 + 5.33$$

$$f = 24.32 < 25 \text{ K/□"} \quad \text{A-36 Steel}$$

It is apparent that the axial stress contributes some 30% to the total stress while the bending stress represents some 70% of the total stress. Since the member is primarily a bending member, the connection to the tie girder could not be predicated on an area for area basis. The connecting plates and their respective bolt groups were designed and detailed to satisfy application of forces. The extreme fiber stress in the connection plates is 23 K/□" < 25 K/□" allowable and the extreme stress on the bolt is 13.2 < 13.25 $K/_{bolt}$ allowable.

10. We have, at your request, reviewed the construction time required for this project. The completion time limit of 900 calendar days specified in the Special Provisions was obtained from an evaluation of the factors involved with this project. This included an evaluation into the requirements of shop detailing, engineering, fabrication, erection, concrete placement and orthotropic deck paving. Also included in this evaluation was our experience with similar projects and consultations with the major bridge fabricators. The 900 calendar days represent our estimate of construction time.

11. We are including herewith a copy of the guarantee form which is to be furnished by the State in accordance with the Special Provisions for the Epoxy Asphalt Paving. (See Item 3.6, page 75 of the Special Provisions.)

12. We are also including for your information and guidance a copy of the Performance Bond used on the San Mateo-Hayward Bridge which is also a requirement for the paving work in this contract. (See Item 3.6, page 75 of the Special Provisions.)

13. In the "Provisions for Welding High Strength Quenched and Tem-

pered ASTM - A514 Steel", under Item e, Magnetic Particle Inspection, page 38 of the specifications, you will note that 50% of fillet welds and all other welds except butt welds used to splice main members will be magnetic particle inspected not less than 48 hours after welds are completed. The proposed changes in AASHO Construction Specifications, Section 10 - Steel Structures, required by the introduction of A514/A517 Steels, recommends 100% of these welds rather than 50% be inspected.

We deem it advisable to make the necessary change in the Special Provisions.

14. We have reviewed the question of non-destructive testing of welds, particularly with respect to the requirements of paragraph d., Radiographic Inspection of A514 steel, on page 38 of the Special Provisions. The provisions of this article are general and pertain to all classifications of butt welds.

The use of ASTM - A514 steel on this project was limited to the arch rib only, which is a compression member. There is no tension or reversal of stress involved with the arch rib.

To be specific, and in order to avoid confusion, it is sufficient for this project to revise Item (1) and (2) of paragraph d. to read as follows: ....."100 percent of all butt welds shall be radiographed."

15. In view of the complex makeup of this structure, some clarification of the non-destructive testing requirements for groove welds is necessary. We, therefore, are including herewith prints of our Drawing Nos. 15 thru 17, 20, 22, 24 and 36 upon which we have indicated the type of inspection required.

We have also added some notes pertaining to the testing of specific plates for laminations.

Will you kindly add the necessary additions to the original tracings.

16. Indicated in red on the enclosed Electrical Drawings - Sheet

Nos. 54 and 55, are two minor changes which are necessary to coordinate the electrical with the structural drawings.

We believe that this concludes our work on the design phase of the Superstructure Contract. If you would like to discuss any of these items with us or have any other questions pertaining to this work, please feel free to contact this office.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano

L. G. Silano
Project Engineer

LGS/cc
Encls.

cc: Mr. T. Edwards
Assistant State Highway Engineer

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STATE HIGHWAY ENGINEER

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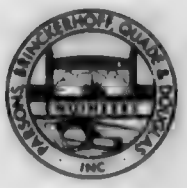

ENGINEERS

I-405-8(17)303
7276

February 14, 1969

Mr. Ivan D. Merchant-Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge

Dear Mr. Merchant:

We are transmitting under separate cover the completed final drawings of the Fremont Bridge Superstructure Contract consisting of sixty one (61) original mylar tracings. Also transmitted are two Xerox reading copies of the Special Provisions including the Bidding Schedule for this contract along with the original Multilith mats.

The drawings and specifications are now complete and were revised to include the review comments discussed at the conference held in your office on January 15, 1969.

We are preparing at this time a reply to some of the still remaining unanswered questions you have asked us to investigate during the course of the conference. These questions, however, do not affect the plans or specifications.

In order to complete the design phase of the work under our contractual agreement we are currently working on and will very soon be sending you the Engineers Estimate for the cost of the work involved in the Superstructure Contract. Also at this time we are reviewing, per your request, the construction time limit and will advise you shortly.

We trust that the plans and specifications have been finalized to your complete satisfaction. If you have any questions please do not hesitate to contact us.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

NOTED TOM EDWARDS

L. G. Silano
Project Engineer

LGS:rk
cc: Mr. T. Edwards

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ENGINEERS

I-405-8(17)303
7276

November 15, 1968

Mr. Ivan D. Merchant
Bridge Engineer
Oregon State Highway Department
Salem, Oregon 97310

Re: Fremont Bridge
Superstructure Plans and Specifications
Bridge No. 2529

Dear Mr. Merchant:

We are transmitting for final review seven (7) complete sets of prints of the superstructure contract for the Fremont Bridge. Each set contains sixty-one (61) drawings which are being transmitted under separate cover. We are also including herewith two (2) copies of the Special Provisions of the Contract Specifications.

The Plans and Specifications have been carried to virtual completion in accordance with the discussion undertaken at a meeting in your office of May 27, 1968 and per your review comments contained in Mr. T. Edwards letter to us dated August 13, 1968.

We are currently working on the lower level concrete deck placing procedure and expect to have this completed shortly. Please note that we have made provisions on Sheet No. 44 for its inclusion in the contract.

Please advise if we can be of further assistance to you.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano

L. G. Silano,
Project Engineer

LGS:rk
cc: Mr. T. Edwards

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I-405-8(17)303
7276

August 13, 1968

Mr. Alfred Nedefine, President
Parsons, Brinckerhoff, Quade and Douglas
111 John Street
New York, New York 10038

Re: Fremont Bridge
Superstructure Plans
and Specifications
Bridge No. 2529

Dear Mr. Nedefine:

We have received comments from the Bureau of Public Roads by letter dated July 31, 1968 (see copy enclosed) regarding your preliminary plans and specifications. Considering the items in the order in which they appear in the Bureau of Public Roads' letter, we offer the following comments:

1. We concur that the Special Provisions must cover welding of A514 and A588 steels. Attached you will find excerpts from the Special Provisions on two of our recent projects that pertain to this. A copy of the "Proposed Changes in AASHO Construction Specifications - Section 10 - Required by Introduction of ASTM A514 and A517 Steels" is also enclosed.

2. We would like your comments regarding the type of weld called for between the suspender rope socket plates and the 48" x 1" web plates and also your comments concerning the proposed modification at the top of the rope suspenders.

3. We would like your comments regarding the thickness of the floor plate for the orthotropic deck system.

4. Please refer to my letter to you dated July 16, 1968 for our position on this matter.

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I-405-8(17)303
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August 13, 1968

Mr. Alfred Hedefine, President
Parsons, Brinckerhoff, Quade and Douglas
111 John Street
New York, New York 10038

Re: Fremont Bridge
Superstructure Plans
and Specifications
Bridge No. 2529

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2. We would like your comments regarding the type of weld called for between the suspender rope socket plates and the 48" x 1" web plates and also your comments concerning the proposed modification at the top of the rope suspenders.

3. We would like your comments regarding the thickness of the floor plate for the orthotropic deck system.

4. Please refer to my letter to you dated July 16, 1968 for our position on this matter.

5. Please refer to your copy of Mr. Ivan Merchant's letter dated July 31, 1968 to the Bureau of Public Roads for detailed instructions pertaining to the lighting.

6. The following are our proposed revisions and/or additions to the Special Provisions:

The entire bid schedule should be arranged as follows with all measurement and pay specifications revised to comply with this bid schedule.

Suggested Bid Schedule

1. Structural Steel — All Required

Includes Parsons, Brinckerhoff, Quade and Douglas Items:

1. ASTM A36 Steel
2. ASTM A 441 Steel
3. ASTM A514 Steel
4. ASTM A588 Steel
6. Shear Connectors

Note: Special Provisions shall include the following: "The contractor shall furnish to the State certified copies of all mill invoices. Said invoices will include the prices for each individual ASTM grade of steel billed thereon."

2. Miscellaneous Metal — All Required

Includes Parsons, Brinckerhoff, Quade and Douglas Items:

7. Miscellaneous Metal
11. 6" Wrought-Iron Pipe
12. 8" Wrought-Iron Pipe

	13. 10" Wrought-Iron Pipe	
	14. 5" Standard Steel Pipe	
	15. 2-way Siamese Connection	
	16. 4-way Siamese Connection	
3.	Castings and Forgings (PBQ&D 5)	All Required
4.	Suspender Rope (PBQ&D 8)	All Required
5.	Class A Concrete (PBQ&D 9)	All Required
6.	Metal Reinforcement (PBQ&D 10)	All Required
7.	Parapet Rail (PBQ&D 17 and 18)	Lin. Ft.
8.	Epoxy Asphalt Paving (PBQ&D 19)	Per Ton or Per Sq. Yd.* *PBQ&D Option
9.	Sign Structures and Signs (PBQ&D 20)	All Required
10.	Lighting (PBQ&D 21-35 incl.)	All Required

Section 7. Legal Relations and Responsibility to Public - Page 2

This section should contain a specification per Exhibit A attached.

Section 7. Article 21 - Page 4

This section should be expanded to cover all streets and railroads within the contract limits.

Section 7. Article 25 - Page 4

This was insurance for the Dock Commission on the pier contract and is not applicable to the work on this contract. No special insurances need be required by this contract other than the railroad insurance that is mentioned later.

Section 7. Article 26 - Page 5

This specification applicable to the pier contract. Need not be carried in the superstructure contract.

Section 8. Article 7. Time for Completion of Work - Page 20

Needs total calendar days cited.

SECTION 404 - CONCRETE MASONRY

Article 2.11 Low Shrinkage Grout - Page 20

The six-year history requirement seems rather severe. Is this absolutely necessary?

Article 3.2 (b) Air Entrainment - Page 21

Is there a particular reason for deviating from our current standard specification which permits inter-ground air entraining agent? I doubt the need of this restriction.

Article 3.5 (j) Automatic Dispensers - Page 21

If Article 3.2 (c) is deleted, this article is not necessary.

Article 4.1 Measurement - Page 21

Revised to provide for payment on an "all required" basis. Show an estimate of concrete quantities.

SECTION 405 - REINFORCEMENT

Article 4.1 Measurement - Page 21

Revised to provide for payment on an "all required" basis. Show an estimate of reinforcing steel quantities.

SECTION 410 - STEEL STRUCTURES

Article 2.1 Structural Plates, Shapes and Bars - Page 22

Delete the last paragraph. The atmospheric

corrosion resistance of A588 steel is stated in the ASTM A588 specification and we would never be able to prove that the requirements of this article have been complied with other than the manufacturers' certificate of compliance.

Article 2.2 Miscellaneous Metals - Page 23

The first paragraph contains a single proprietary name which is frowned upon. Can additional products be named? If not, use the words "or equal".

Article 3.22 (106) Welding Processes - Page 23

This article could be deleted as it is contained in a similar article in the Supplemental Standards for Steel Structures which is attached marked Exhibit B.

Article 3.22 (601) General

We feel that this section should be changed and that radiographic, ultrasonic and magnetic particle be used in the appropriate manner as suggested by the attached Exhibit C.

Other Comments Pertaining to Specifications

The specification as presented does not mention the type of shop assembly required and we could not find notes on the plans indicating the same. Refer to Article 3.12 in the Supplemental Standards for Steel Structures, Exhibit B attached. This must be specified in the Special Provisions.

Oregon State Highway Department welding specifications were derived from the American Welding Society and modified to suit Department requirements and Bureau of Public Roads modifications. These specifications cover essentially the welding of A36 and A 441 steels only. This section must be expanded to cover the welding of A514 and A533 steels, principally as to procedures and qualification of procedures. We believe qualification of welders is somewhat archaic, even though we have included it in the past. We leave this to your judgment as to omission or inclusion.

All specifications for measurement and payment

should be revised to place measurement and payment for structural steel on an "all required" basis.

SECTION 413 - RAILINGS

As we read the drawings, the lower deck roadway parapet is concrete with conventional single aluminum pipe parapet rail and the upper deck roadway parapet is formed structural steel with conventional single aluminum pipe parapet rail. For bidding purposes the lower deck parapet can be included as a part of the concrete item per our usual custom. The upper deck parapet can be included as a part of the structural steel and with a single bid item for single parapet pipe rail for both the upper and lower decks.

SECTION 461 - BRIDGE DRAINAGE

Page 38

All materials should be classified and paid for as a part of the miscellaneous metal.

SECTION 463 - STANDPIPE AND FIRE HOSE CONNECTIONS

Page 40

All materials should be classified and paid for as a part of the miscellaneous metal.

Lighting specifications not included.

Upper deck surfacing specifications not included.

Castings and forgings specification not included. Type of inspection must be stated.

Specification notes on Plan Sheet 3 should be corrected to delete AASHO specifications except for design stresses and so forth.

The language "with atmospheric corrosion resistance" should be deleted.

The note on Sheet 3 about welding should be deleted.

The note about placement of concrete in the lower deck is very vague. We suggest that a definite pour schedule be worked out and included as either a part of the drawings or in the specifications.

There are some additional items which have been discussed at various times which we would like to clarify:

1. We request that you work up Special Provisions for either the three-coat epoxy or the inorganic-zinc with high solids vinyl topcoat paint systems, whichever is your recommendation. It should be specified that cleaning, sandblasting, and application of all coats of paint except the final coat be done in the shop or in a suitable site under cover near the job site. Only minor sandblasting as necessary at connections will be permitted after erection.

2. We would like to receive at an early date your estimate of the required construction time.

3. It is our understanding that as a result of a restudy of the lower deck system you are using two and three panel continuous decks between panel points 13 and 13' with the system between panel points 0 and 13 remaining as originally planned. The joints shall be provided with armored corners as per your recent discussion with Mr. Merchant.

4. We have not at this time made a firm decision to provide for future contour lighting of the arch rib. As per my discussion with Mr. Louis Silano, you shall make provisions to permit addition of future contour lighting.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant

CAG:LLW:jf/TE:ja

Enc.

Mr. Cooper/Mr. Edwards

RECEIVED
JUL 26 1968
FOR FILING

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
[illegible] STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

I-405-8(17)303
7276

July 23, 1968

Allied Structural Steel Company
1435 165th Street
Hammond, Indiana 46320

Re: Superstructure Contract
Fremont Bridge over Willamette River
Portland, Oregon

Attention: Mr. J. W. Raffensperger,
Manager of Sales

Gentlemen:

We received your letter of July 17, 1968 expressing an interest in the bridge crossing of the Willamette River in Portland, Oregon, known as the Fremont Bridge. We have noted your request to be placed on the bidders list and you will be notified accordingly.

Later this year the steel superstructure for the Fremont Bridge will be advertised for bids. If advertised late this year the contract would be ready for award probably the first quarter of 1969.

This bridge is a three span stiffened tied arch with the main span 1,255 feet completely spanning the river, and two side spans of 452 feet each. The estimate of steel in the superstructure is in excess of 22,000 tons of steel. The structure is double deck with five lanes in either direction with a possible capacity for six. The bridge main span has an underclearance of 175 feet and the top of the arch rib is approximately 300 feet above the level of the river. At the present time Peter Kiewit is the contractor building the four main piers for this bridge. The upper deck of this structure is an orthotropic deck with the lower deck a regular concrete roadway slab.

NOTED
TOM EDWARDS

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Mr. J. W. Raffensperger,
Manager of Sales

July 23, 1968

We have prepared a set of preliminary drawings to send to interested parties and we are sending to you, under separate cover, this set of drawings which show the general geometry of the bridge, stress sheets showing the loading conditions, typical cross sections of the roadway and typical large joint details. Further, if you are interested in this bridge and wish to consult with us, we are ready to receive you in our New York offices to go over the project and answer your questions.

For your information, we are contacting the following fabricators and erectors on this structure:

Pacific Car and Foundry Company, Seattle, Washington
Isaacson Structural Steel Company, Seattle, Washington
American Pipe and Construction Company, Portland, Oregon
Kaiser Steel Corporation, Oakland, California
Pacific-Murphy Corporation, Emeryville, California
American Bridge Division of U.S. Steel Corporation
Fabricated Steel Construction - Bethlehem Steel Corporation

Please contact us should you wish further information.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Alfred Hedefine
President

AH/mr

cc: Mr. Forrest Cooper/Mr. T. Edwards ✓
Mr. Ivan Merchant

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JUL 25 1968
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUL 19 1968
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I-405-8(17)303
7276

July 18, 1968

Mr. Louis G. Silano
Project Engineer
Parsons, Brinckerhoff, Quade
and Douglas, Inc.
111 John Street
New York, New York 10038

Dear Mr. Silano:

We have examined your design details for attachment of the sign structures to the portal struts of the Fremont Bridge on the Stadium Freeway.

They are satisfactory.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

TE:ja

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant (enc.)

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
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ENGINEERS

July 15, 1968

Mr. T. Edwards
Assistant State Highway Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Sign Supports
Fremont Bridge
Stadium Freeway
Multnomah County
Bridge No. 2529

Dear Sir:

We are enclosing herewith two (2) prints of our study sketch SK-1, which we believe incorporates your suggestion to move the upper deck sign bridge to the portal of the arch near Station FB3 352+80. Our studies involved with the relocation of these particular signs reveal that it is feasible to attach the sign structure to the portal strut as shown in Section A-A. It is our intention to mount the sign panel so as to completely conceal the mounting details on the portal strut. This provides an overclearance of some 2' - 9" at this location.

The sign structure for the lower roadway will be detailed as a triangular truss similar to the samples furnished us with your letter of July 2, 1968.

Please advise us if you are in agreement with the above as we will await your decision before proceeding with the final plans.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano

L. G. Silano
Project Engineer

LGS/co
Encls.

cc: Mr. Ivan D. Merchant

RECEIVED
JUL 16 1968
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUL 18 1968
FOR FILING

I-405-8(17)303
7276

July 16, 1968

library

Mr. Alfred Hedefine, President
Parsons, Brinckerhoff, Quade
and Douglas, Inc.
111 John Street
New York, New York 10038

Dear Mr. Hedefine:

I have your letter of June 7 transmitting a copy of the research carried on by the Battelle Memorial Institute with respect to paving on orthotropic bridges, and Mr. Silano's paper concerning the same subject.

We concur in your recommendation that the procedure outlined on page 11 of Mr. Silano's report be followed. We also would be agreeable to any revision which you might wish to make after the meeting on September 7, 1968 at Columbia University dealing with the subject "Wearing Surfaces for Steel Bridge Decks of Lightweight Construction".

We are opposed to contracting the bridge surfacing as a separate item and will insist that it be a part of the general contract.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

TE:ja

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
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ENGINEERS

June 7, 1968

Mr. Ivan Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge

Dear Mr. Merchant:

Lou Silano has reported to me concerning the meeting in your offices in Salem on Monday, May 27, 1968 for the purpose of discussing progress on the Fremont Bridge project. I trust that the results of the conference were to the Department's satisfaction and I express my regrets at not being able to attend.

As you know we have been researching the problem of pavement for the orthotropic upper deck of the bridge. You will find enclosed, two copies of a report entitled "An Evaluation of Paving Practices for Orthotropic Bridges and a Recommendation of a Paving System for the Fremont Bridge" as prepared by Mr. Silano after considerable discussion with all concerned on the subject.

At this juncture in our study, we are recommending that a system of paving be followed in accordance with that enumerated on page 11 of the report. Our conclusion at this time was influenced to some degree by what we studied, observed and inspected of the pavement on the San Mateo-Hayward Bridge, State of California Division of Bay Crossings. We were fortunate to have inspected the bridge before, during and after the paving of the orthotropic deck. I might mention the fact that the Division of Bay Crossings intends to use the same system for the San Diego-Coronado Bridge crossing presently under construction.

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
JUN 10 1968
AM 7,8,9,10,11,12,1,2,3,4,5,6 PM

Mr. Ivan Merchant,
Bridge Engineer

June 7, 1968

It is our opinion that the system recommended is not necessarily the ultimate, but it is the best that has been produced to date. We would like to suggest, since the present timetable for taking of bids allows it, that we reserve a final recommendation and the Department reserve a final decision in this matter until after the conclusion of the international symposium on "Wearing Surfaces for Steel Bridge Decks of Lightweight Construction" to be held in New York at Columbia University on September 7, 1968 in conjunction with the Congress of the International Association for Bridge and Structural Engineering.

Another recommendation we would propose to the Department is that the work to be performed in paving the othotropic deck be advertised for bids and let as a separate contract. Some of the reasons for strongly recommending this procedure are:

1. The character of the work and its limitations are such that it will require people who are specialists and familiar with and capable of handling the ingredients, the materials and the special equipment required.

2. The superstructure contract is basically a steel fabrication and erection contract with the exception of the lower concrete deck slab and the upper orthotropic deck pavement. Consequently there is a strong line of demarcation in the character of the work and personnel involved.

3. The steelwork must be finished before the deck can be placed and therefore there would be no interference of working forces.

4. The paving being a highly specialized operation would of necessity have to be let as a sub-contract by the successful steel bidder and consequently a surcharge would be placed on the sub-contract work by the general contractor.

5. If let as a separate contract, the State Highway Department would more than likely receive the benefit of the lower bid price.

Mr. Ivan Merchant,
Bridge Engineer

June 7, 1968

6. The same reasons are applicable, more or less, to the case of placing the concrete slabs for the lower deck.

On some of our more recent large structures we have found that the superstructure steel contractor strongly prefers that the paving contracts be let separately. We believe that in spite of a little more coordinating effort needed on the part of the Resident Engineer and his staff during construction under the separate contract arrangement, the client does receive the benefits of reduced cost, more real control of the work, and in some instances a better product.

In the foregoing we have tried to transmit to you our basic premises concerning the paving matter. Should there be any questions or discussion that you think might better be settled by a conference at your offices, we will be available at your convenience.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Alfred Hedefine

Alfred Hedefine
President

AH/mr
enclosures

RECEIVED
JUL 16 1968
OFFICE OF
STATE HIGHWAY ENGINEER

June 7, 1968

AN EVALUATION OF PAVING PRACTICES FOR ORTHOTROPIC BRIDGES

AND A RECOMMENDATION OF A PAVING SYSTEM FOR THE FREMONT BRIDGE

An extensive research of the literature has been undertaken in order to become familiar with current and past paving practices of orthotropic bridge decks. The culmination of this effort was to find and recommend a suitable paving system for the orthotropic upper deck of the Fremont Bridge.

Orthotropic bridge design has experienced widespread growth in Europe. Because of the current interest in the United States, a comprehensive study has been made of European paving systems to provide a basis for selecting paving materials for this country. This was prepared and published by the Battelle Institute for the American Iron and Steel Institute.

Presently there are three types of paving systems being used in Europe; the layered system, the stabilized mastix system and thin combination coatings. The first two systems have been used extensively.

The layered system is made up of a deck prime coat, an isolierung, a leveling course and a surface course. The materials usually used for this system are:

(1) Prime Coat - Bituminous paint, lead base paint, zinc metallizing, epoxy coatings.

(2) Isolierung - Aluminum foil; copper foil, asphalt mastix (most effective).

(3) Leveling Course - Asphalt binder, guss asphalt, stabilized mastix.

(4) Surface Course - Gussasphalt, stone-filled mastic asphalt, asphalt concrete.

The layered system has been in use for approximately 20 years. Some pavements have performed quite well and a few rather poorly. Common defects have been shoving, rutting, blistering and cracking. Cracking has been the most severe and is generally attributed to severe temperature gradients and to plate deflections. With improvements in the isolierung many of the shoving and temperature cracking problems have been overcome, but cracks due to plate deflections still persist.

It is interesting to note that corrosion of the steel deck plate has not been a problem as numerous inspections have shown no evidence of corrosion.

The stabilized mastix system as used in Germany is applied over a

prime coat and is a void-free, high bitumen content, asphaltic concrete made in place on the deck. A 3/4 inch layer of asphalt mastix is placed over the prime coat and then crushed rock is rolled into the mastix while it is still soft. The resulting pavement is approximately 2" thick. In this system mechanical anchors are used to stabilize the pavement. This system is generally acknowledged to be the best in Germany but its high cost has limited its application.

A thin combination coating system refers to a single layer of material which serves the multiple purpose of prime coat, leveling course and wearing surface. The materials may be shop or field applied in thicknesses not exceeding 1/2 inch.

The use of thin combination coatings, such as filled epoxies and cement-latex mixtures, has been limited and while results have been encouraging, not enough service experience is available to provide reliable evidence about their permanence and durability.

The findings of this study lead to the following conclusions about European practice:

(1) No ideal surface system has been found, but pavings are possible that with reasonable maintenance measures can be expected to perform for ten years or more.

(2) Corrosion of the steel deck plate has not been a problem. There are a sufficient number of materials to provide adequate protection against corrosion.

(3) The use of a mastix isolierung has proved effective both for waterproofing and as a shear layer to prevent temperature cracks.

(4) A metal foil layer is not recommended.

(5) A two-layer wearing surface has been most often used, but tests show a single layer can be as effective.

(6) Tests show that asphaltic pavement can contribute significantly to the stiffness of the steel plate, depending on the temperature and the speed of loading.

(7) Very thin single coat paving systems show promise for the future.

Many of the above conclusions are corroborated by the investigations of the IABSE and are included in their report, Theme I of the Symposium on Wearing Surfaces.(13)

In many of the personal observations of Mr. Edward S. Sheiry,(12) of our firm, on his recent European tour of orthotropic deck bridges, he asserts that due to the great flexibility of the deck plate the paving invariably cracked across the entire roadway. His observations bear out the need for a paving material that will develop satisfactory adhesive and flexural fatigue properties.

It can be generally concluded that the ideal solution to the paving problem of orthotropic bridges has not been satisfactorily solved. Furthermore, the most satisfactory systems in use in Europe have not been used in this country mainly because they involve hand labor, skilled workmen and equipment or materials which are not readily available. Of extreme importance are the tight tolerances placed on surfacing requirements for modern highway construction in this country, something which would be difficult to achieve by hand operations employed in Europe.

Some of the more recent major orthotropic bridges and their paving systems are as follows:

(1) <u>The Port Mann Bridge</u> (2)(4)

a) Sandblast to clean white metal.

b) A 4-5 mil coat of red lead polyamide heat cured epoxy primer.

c) Within 24 hours of applying the primer a coal tar epoxy prime coat with asbestos filler was applied at a rate of 30 ft.^{2}/gal. Prior to setting, the coal tar was sprinkled with crushed rock chips at a rate of 7.5 lb./sq. yd.

d) An asphalt emulsion tack coat was applied prior to the leveling course.

e) The leveling course consisted of a 1/2 to 3/4 inch layer of sand asphalt machine-layed and compacted with rollers.

f) The surface course was 1-1/2 inches of asphalt concrete.

This bridge was personally inspected by members of our firm in March 1967, some three years after being open to traffic, and is reported in excellent condition.

(2) <u>The Poplar Street Bridge</u> (5)

a) Deck plate to be blast-cleaned to white metal.

b) A 2-1/2 to 5 mil coat of zinc paint.

c) After cleaning, apply a 16 mil thickness coating of coal tar epoxy plus a grit surfacing.

d) A 1-1/2 to 1-7/16 inch leveling course of bituminous concrete containing a latex rubber compound.

e) A 1-inch surface course of bituminous concrete containing a latex rubber compound.

This system was selected based on the evaluation of experimental pavements placed on a small test bridge installed near Troy, Illinois in 1962.

(3) The Severn Bridge - England (6)

a) Deck plate grit-blasted after fabrication.

b) Zinc sprayed and treated with a coat of etch primer.

c) A primary coat of bitumen paint to protect the zinc until the deck could be surfaced.

d) Cleaning of the steel deck with a detergent to insure adhesion.

e) Application of a tack coat (Bostik 1255) rubber-bitumen primer applied at a rate of 30 $yd.^2$/gal.

f) An insulating layer consisting of a bitumen filler with 5% by weight added of unvulcanized rubber powder (Pulvatex). When heated to 180° C this material is very fluid and is laid to required thickness by squeegees.

g) Over the insulating layer a 1-3/8" stone-filled mastic asphalt was laid by hand and coated chippings were rolled in to give a good non-skid surface.

This form of surfacing was also used on the Forth Bridge and has proved satisfactory.

(4) Dublin Bridge - California (2)

The State of California has paved an experimental test bridge on Interstate Route 680 over U.S. Rt. 50. The 7/16" deck plate is paved with a coal-tar epoxy-grit mixture having an average thickness of 1/4 inch. This surfacing was placed over three deck plates prepared as follows:

(1) Deck plate sandblasted only.
(2) Deck plate sandblasted with a 1-mil hot sprayed zinc coating.
(3) Deck plate sandblasted with a 5-mil hot sprayed zinc coating.

Another portion of the bridge, which has a 3/8" deck plate, was given a prime coat of coal-tar epoxy 1/16" thick applied by hand

using squeegees. This was applied over the three types of deck plate preparations discussed above. Immediately after placing the prime coat, crushed rock 1/2 to 3/4 inch in size was scattered over the epoxy. A second coat of 1/16" thickness was applied over the crushed rock. Next, an asphalt concrete wearing surface was placed in one lift to produce a total wearing surface thickness of 2". A sealer consisting of an asphalt emulsion fog coat was added.

The only difficulty encountered in the application was in thickness tolerance of the epoxy-grit surfacing.

It is reported by Ben Balala [7] that the....."thin type epoxy coal-tar, grit-filled wearing surface placed over sprayed metallic zinc is showing lack of adhesion. A similar type placed over bare steel is performing much better. An asphaltic concrete pavement placed over an epoxy coal-tar, grit-filled, slip-resistant coat shows signs of cracking."

While on the subject of thin coatings, it might be advisable to discuss the use of "CYBOND" as applied to the Smithfield Street Bridge.

(5) Smithfield Street Bridge - Pittsburgh, Pennsylvania [8]

This is an aluminum orthotropic deck used as a repair to the original bridge built in 1882 and repaired in 1933. The wearing surface was placed in the shop. The operation proceeded as follows:

(1) The surface was sandblasted and cleaned.

(2) A primer was brushed on at a rate of 1/2 to 1 gal./100 sq. ft.

(3) Curing of the primer is 24 hours minimum.

(4) The finish coat is a resinous mortar consisting of polyester resin, washed dry sand, and 1% methyl ethyl ketone peroxide.

(5) This mortar was spread by squeegee to a total thickness of 3/8 inch.

The results of tests conducted by the Division of Bay Toll Crossings under Mr. B. Balala on "CYBOND" Polyester Resin are as follows:

(1) Flexure tests concluded after 1,008,000 cycles of loading without any indication of distress. The load measured statically was 700 lbs. and the resulting deflection both before and after

the test was 0.0075 inches.

(2) Attempts at an adhesion test always resulted in failure of the epoxy adhesive between pavement surface and steel cap. The maximum unit stress obtained was 375 psi tension with no distress to the pavement.

Mr. Balala concludes that the above compares favorably with results obtained with the best performing materials tested to date in their program.

The results of these tests are encouraging and certainly the Smithfield Street Bridge should be thoroughly scrutinized over the next few years.

The use of thin-coat surfacings for the Fremont Bridge was eliminated for the following reasons:

(1) There is no opportunity to adjust the grade and cross slope for weld distortions and misalignments associated with the usual fabrication tolerances. The tight paving tolerances required for the riding surface of modern express highways cannot be attained with the application of thin-coatings whose finished surface will be governed by that built into the deck plate.

That this is a serious problem which to date has plagued any attempt to develop a successful thin surfacing is attested to in Theme III of the IABSE report.(13)

(2) In view of the fact that a bolted transverse deck-splice is permitted, the thin surfacings are not compatible.

(6) Ulatis Creek Bridge - Vacaville, California

This bridge was surfaced with five experimental paving materials which were to be evaluated by the California Division of Bay Toll Crossings for use on the San Mateo-Hayward Bridge.

The surfacing materials were as follows:

(1) Asphaltic concrete.
(2) Epon asphalt concrete by Shell Oil Co.
(3) Epoxy resin mortar (Guardkote 250 by Shell Oil Co.)
(4) Epoxy resin mortar (Resiweld R-7122 by the Fuller Co.)
(5) Epoxy resin mortar (Concresive 1064-3 by Adhesive Eng. Co.)

All surfacing materials were applied to a sandblasted deck coated with 3 mils of hot-sprayed zinc.

The results of the above field tests have been failure of the asphaltic

concrete section by slipping or shoving on the steel deck. This has been replaced twice in the first year. All other test patches are performing well.

The five materials chosen for the field test were selected from extensive laboratory tests. The ultimate aim of all these tests was to find a material that would develop satisfactory adhesive and flexural fatigue qualities, and be placed with conventional paving equipment to the tight pavement tolerances of today's modern highways.

A few interesting facts and conclusions concerning the laboratory tests are as follows: (2)(8)

(1) The protection for the steel plates was either inorganic zinc primer or sprayed zinc.

(2) The coal-tar modified epoxy resin bond coat was not an advantage and did not increase the adhesion value of asphaltic or Epon asphalt.

(3) Both the inorganic zinc and the sprayed zinc had adhesion strengths to steel stronger than the tensile strengths of the asphalts.

(4) The asphalt concrete specimens had a brief fatigue life. The maximum fatigue life tested in flexure was only 13,800 cycles.

(5) The Epon asphalt had an average fatigue life in flexure of 721,400 cycles with four specimens reading approximately one million cycles and three specimens exhibiting no cracking at one million cycles.

(6) The average adhesion for the asphaltic concrete was 78 psi, while that of the Epon asphalt is 118 psi. Later tests on the Epon asphalt revealed much higher values, and it is speculated that the Epon asphalt did not have its full cure at the time of the earlier tests.

Based on the results of the experimental testing program, the California Division of Bay Toll Crossings selected Epon asphalt as the wearing surface to be used on the San Mateo-Hayward Bridge. Their recommendation contained the following reasoning:

(1) This material gave satisfactory adhesive and flexural fatigue qualities.

(2) Could be placed to high surface finish standards with currently available construction equipment. The methods of material suppliers in constructing the test patches with epoxy mixtures were not systematized.

(3) Epon asphalt could be mixed in existing hot plants and placed and finished with standard available paving equipment.

(4) Other things being equal, the only variable factor affecting cost is the epoxy content. About 1/10 as much epoxy is required for Epon asphalt as for the other epoxy mixtures.

They concluded that Epon asphalt is virtually the only logical choice available at that time.

Evaluation of Zinc Coatings for the Deck Plate

The outstanding success with the use of post-cured inorganic zinc coatings as corrosion prevention to steel structures is well-known fact. The recent developments of the self-cured inorganic zinc coatings, along with their reduced costs and better susceptibility to high volume production line shop priming, prompted an investigation into the merits of post-cured vs self-cured inorganic zinc coatings.

Comparison of Post-cured Zinc-Lead Silicate to the Self-cured (9)

(1) Long-term Weathering and Marine Tests - coated and scored panels when subjected to 18 months of seawater immersion tests revealed:

a) Post-cured: Little or no score corrosion, otherwise unaffected, film hard.

b) Self-cured: Mild score corrosion, otherwise unaffected, film hard.

(2) Industrial atmosphere tests - V shaped area left bare in the center of each panel, exposure period 3 months:

a) Post-cured: Scattered rust in groove, excellent apex protection.

b) Self-cured: Same as above.

A set of panels coated with self-cured zinc-lead silicate coating exposed for two years on an 80-foot lot at Kure Beach, North Carolina, is unaffected by this exposure.

Advantages vs Disadvantages - Post-cured vs Self-cured

I Post-cured

Advantages

(1) Outstanding performance - long and proven record.

(2) Ability to be cured quickly.

(3) Acceptability of top coats is excellent.

Disadvantages

(1) Added costs (labor and materials) for the curing agent and its application.

(2) Curing agent residue must be removed before top coating.

II Self-cured

Advantages

(1) Lower initial cost - saving the material cost and application cost of the curing agent.

(2) No residue needs to be removed.

(3) Simpler application in high volume production line shop priming because the second curing step is not required.

Disadvantages

(1) Cure is dependent on temperature and humidity conditions.

It is clear that the only argument for the post-cured inorganic zinc-lead silicate primer is its past performance. This is not to say that the self-cured will not perform equally as well when all experimental data indicates this is a likelihood.

The use of a self-cured inorganic zinc-lead silicate as a protection for an orthotropic steel deck is entirely justified. The decision by the Division of Bay Toll Crossings to adopt it for use on the San Mateo-Hayward Bridge is understandable.

Fire Test of Bridge Decking

Before the selection of a deck surfacing system for an orthotropic structure is finalized it should be investigated to determine the possibility of serious structural damage to the steel deck in the event of a gasoline fire. A fire test was conducted on a representative paved section of the San Mateo-Hayward Bridge in October 1967.[10] This test consisted of a one-hour fire test on a 6 foot by 25 foot panel.

The fire was allowed to burn for 60 minutes during which time gasoline was fed continuously to the fire at an average rate of 35 gallons per minute, which was more than required to sustain a fire the full length of the plate.

The highest temperature recorded in the deck plate during the fire was 170°F. One thermocouple never exceeded 115°F. After the fire was extinguished, the plate temperature continued to increase slowly, reaching a maximum of 195°F in 35 minutes after the fire was extinguished.

A post-test inspection of the pavement revealed three distinct areas; (1) the center portion, (2) the downwind side, and (3) the upwind side. The center portion was softened and discolored due to the gasoline flowing and boiling over it. The center portion temperature was probably about 400°F. The downwind side, where the temperature was about 1400°F, had the top 1/2 inch of pavement charred and spalled.

The results of this fire test indicated that the deck can easily withstand a severe fire without significant damage to the orthotropic plate, and verified the excellent insulating properties of the epoxy-asphalt surfacing.

SUMMARY

The following is a brief summary of the conclusions arrived at during this investigation:

(1) Corrosion of the steel deck plate has not been a problem even though the ideal solution to the paving problem has not been satisfactorily solved.

(2) European practice differs from American practice in that there is too much reliance on hand labor and skilled workmanship. This hand operation leaves something to be desired when considering the paving tolerances required for modern highway construction.

(3) Thin-coat surfaces were considered impractical for the Fremont Bridge since the riding surface will only reflect what distortions, misfits or misalignments that are actually built into the structure.

(4) The results of the test program conducted by the California Division of Bay Toll Crossings on Epon asphalt resulted in it being selected as the wearing surface for the San Mateo-Hayward Bridge. I understand that they have selected Epon asphalt as the wearing surface for the San Diego-Coronado Bridge.

(5) The use of a self-cured inorganic zinc-lead silicate in lieu of post-cured is entirely justified as protection for orthotropic steel decks when considering their reduced costs and their better susceptibility to high volume production line shop priming.

RECOMMENDATIONS

After intensive investigation, it is our opinion that if the paving for the orthotropic deck is to be included as part of the current Superstructure Contract, we submit the following recommendations to Mr. Ivan Merchant, Bridge Engineer, Oregon State Highway Department, as the pavement system to be adopted for the Fremont Bridge:

(1) Deck preparation - sandblast to clean white metal.

(2) A minimum 3.5 mil coat of self-curing inorganic zinc-lead silicate primer. Field touch-up as required to sandblasted areas.

(3) Deck plate to be washed with a detergent solution and rinsed with clean water prior to the application of the bond coat.

(4) Machine-applied coat of epoxy asphalt bond coat.

(5) A leveling course, approximately 1-1/4" thickness, applied to clear all bolt heads by 1/8 inch at butt splice plates. The leveling course to consist of epoxy asphaltic concrete with a maximum 4% voids.

(6) Machine-applied coat of epoxy asphalt bond coat.

(7) A final surface course approximately 1-1/4" thick of the same composition as the leveling course.

L. G. Silano

REFERENCES

(1) Current Paving Practices on Orthotropic Bridge Decks, Battelle Memorial Institute, Bulletin No. 1, October 1965.

(2) Research on and Paving Practices for Wearing Surfaces on Orthotropic Steel Bridge Decks, Battelle Memorial Institute, Bulletin No. 3, August 1966.

(3) Researchers Seek Surface Course for Orthotropic Deck - ENR, November 25, 1965.

(4) The Port Mann Bridge, by George W. C. Lake, MEIC.

(5) Surfacing Specifications Are Rigid - ENR pg. 24, October 20, 1966.

(6) Natural Rubber for Severn Bridge Surface - Rubber Developments Vol. 19 - No. 4, 1966 quarterly.

(7) Results of Studies of Materials for Steel Orthotropic Deck Pavement - San Mateo-Hayward Bridge - State of California Department of Public Works, Division of Bay Toll Crossings by Ben Balala, Construction Engineer.

(8) Flexural Tests of Paving Materials for Orthotropic Steel Plate Bridges, by C. T. Metcalf.

(9) Comparison of Self-Curing and Post-Curing Inorganic Zinc Coatings, by D. H. Gelpher, Materials Protection.

(10) Fire Test of Bridge Decking
The San Mateo-Hayward Bridge - Report by E. B. Thomas, Standard Oil of California.

(11) AISC Design Manual for Orthotropic Bridges (Roman Wolchuk;

(12) Edward S. Sheiry - Memos on Orthotropic Bridge Decks

(13) International Association for Bridge and Structural Engineering September 7, 1968 Symposium to be held at Columbia University, New York; Themes I, II and III.

RECEIVED
JUL 3 - 1968
FOR FILING

I-405-8(17)303
7276

July 2, 1968

Mr. Louis G. Silano
Parsons, Brinckerhoff, Quade & Douglas
111 John Street
New York City, New York 10038

Re: Sign Supports
Fremont Bridge
Stadium Freeway
Multnomah County
Bridge No. 2529

Dear Sir:

In order that the sign structures shall be of uniform construction, we have selected the Trylon type of sign span, which is manufactured by Pfaff and Kendall. This sign structure is fabricated of aluminum and the truss is triangular in shape.

We are attaching copies of two sample drawings which this company made for the Commonwealth of Massachusetts, which illustrate the type of structure we desire. In making the drawings for the sign bridges, the shape and appearance should be reasonably the same.

We are also attaching drawings showing the sign sizes and messages for the signing on the subject structure. It has been suggested by our Traffic Division that since there is only one sign bridge on the Fremont Bridge (this being located on the upper deck at Station FB 350+85) it be moved to the portal of the arch near Station FB 352+80, thus eliminating entirely the sign bridge.

Will you please look into the feasibility of making the change in the location of these particular signs.

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant
F. B. Crandall

TCR:jr ja

Enc. (2)

Very truly yours,

Forrest Cooper
State Highway Engineer

By ORIGINAL SIGNED BY
E. R. KLAROS

Tom Edwards
Assistant State Highway Engineer

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JUL 8 - 1968
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BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N. Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117
ENGINEERS

I-405-8(17)303
7276

June 25, 1968

RECEIVED
JUN 27 1968
OFFICE OF
STATE HIGHWAY ENGINEER

Mr. Forrest Cooper, State Highway Engineer
State Highway Department
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge - 2529 Arch Rib
Superstructure Contract

Attention: Mr. Tom Edwards,
Assistant State Highway Engineer

Gentlemen:

We have your letter of June 20, 1968 in answer to ours of June 18th, concerning the straight vs. curved point-to-point configuration of the arches of the Fremont Bridge.

We are sorry that you feel some disappointment as to the configuration to which the arch rib has been designed, but we are certain when the bridge has been fabricated and erected in its final form the arch rib will appear to be curved except when viewing it closeup.

We have re-examined the American Institute of Steel Construction's brochures of prize bridges for 1966 and 1967 and have noted, and am sure you have also, that only one of these is basically the same kind of structure as Fremont Bridge and it does have a curved chord member, but is a very much smaller bridge. The others that are shown were designed on the basic principle of the arch rib taking all of the bending moments as well as the direct thrust, and therefore arch ribs are the largest and deepest members on the structures. As you know, the tie girders on the Fremont Bridge were designed to take all of the bending moments in order that the arch ribs might be as small as possible.

We are continuing to proceed with the superstructure contract of the Fremont Bridge.

NOTED
TOM EDWARDS

Yours very truly,

Alfred Hedefine

AH/mr

cc: Mr. I. Merchant

JUN 21 1968
FOR FILING
I-405-8(17)303
7276

June 20, 1968

Mr. Alfred Nedofine
Parsons, Brinckerhoff,
Quade and Douglas
111 John Street
New York City, New York 10038

Re: Superstructure Contract
Fremont Bridge
Bridge No. 2529

Dear Sir:

Reference is made to your letter of June 14, in which you list four major steel fabricators and erectors that you intend to contact regarding fabrication and erection of the superstructure steel of the Fremont Bridge.

As discussed before, the State is in agreement with this procedure, as it is the logical way to obtain many of the items necessary to formulate any kind of an erection scheme and a final preliminary cost estimate.

In addition to the four fabricators mentioned in your letter of June 14, I believe the Isaacson Structural Steel Company and Pacific Car and Foundry Company in Seattle, as well as the American Pipe and Construction Company at P. O. Box 11097, Portland, Oregon, should be included in the list. It is believed that the last three companies could enter into a subcontract for fabricating portions of the superstructure, and particularly the orthotropic deck sections, which are very difficult to ship.

The State will rely on your judgment as to fabricators in the eastern part of the country who have the knowledge, equipment and fabricating facilities adjacent to adequate transportation facilities.

For your information, the Oregon State Highway Commission has directed that only domestic steel and domestic fabrication are to be used in state highway work.

We would appreciate being kept advised of the results of your informal discussions with the industry.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant

IDM:jr ja

JUN 21 1968

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I-405-8(17)303

7276

June 20, 1968

Mr. Alfred Hedefine, President
Parsons, Brinckerhoff,
Quade and Douglas, Inc.
111 John Street
New York, New York 10038

Dear Mr. Hedefine:

Reply is made to your letter of June 18 concerning the straight vs. curved point-to-point configuration of the arches of the Fremont Bridge.

I realize that it is too late at this time to enter into discussions concerning the curved configuration and I approve with some disappointment the configuration which you have presented. I examined the pictures which you forwarded and have, of course, re-examined the preliminary report on the Port Mann Bridge, which I mistakenly thought was curved configuration.

My desire for the curved configuration was brought about I believe in part by the long span steel bridges shown in the American Institute of Steel Construction's brochure of prize bridges for both 1966 and 1967. In both instances, the bridges were designed by the Utah State Highway Department.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

TE:ja

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

June 18, 1968

Mr. Tom Edwards,
Assistant State Highway Engineer
State Highway Commission
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge - Superstructure

Dear Mr. Edwards:

On Monday, May 27, 1968 Mr. Silano our Project Engineer, met with you in the Department's offices in Salem, at which there were present members of your staff and representatives of the Bureau of Public Roads, for the express purpose of discussing the superstructure contract for the proposed Fremont Bridge over the Willamette River in Portland, Oregon. During the conference you raised the question as to the advisability of curving the arch rib members for aesthetic purposes. Evidently it was concluded after some discussion that we would investigate the matter and report our findings to you.

Presently the arch ribs have been designed and laid out on straight lines between panel points and thereby represent a true parabolic force diagram. This concept has been the one represented in all of our previous preliminary reports and layouts.

We have made a preliminary investigation in an attempt to compare some of the more obvious differences that occur between a curved arch versus a polygonal chorded arch and the results of our study are as follows:

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Mr. Tom Edwards,
Assistant State Highway Engineer

June 18, 1968

1. The middle ordinate or offset (distance from the chord to the centerline of the parabola) for the main or center arch varies from a minimum of 4 inches between panel points 10 and 11 to a maximum of 5-1/2 inches between panel points 23 and 24.

   The corresponding offsets in the side arch spans vary from a minimum of 4-1/2 inches between panel points 3 and 4 to a maximum of 5 inches between panel points 5 and 6.

2. Between panel points 10 and 11 the axial force in the arch rib due to DL+LL+I is a maximum of 13,564 kips, which results in an additional bending moment in the member due to curvature of 4,517' kips. In arch rib member 23-24 the additional bending moment due to curvature amounts to 3,900' kips. Based upon the present cross sectional areas of the members, the approximate average increase in the unit stress in the arch rib is in the order of 9,600 psi.

3. Because of these additional bending moments induced by the curvature, the arch rib will have to be increased in area by approximately a minimum of 20% throughout its entire length (center and side spans).

4. It will be necessary to redesign all arch members, the connections and splice material.

5. Undoubtedly, the curving of the rib members will add to the cost of fabrication. For example, all the vertical webs for the arch section will have to be fabricated from plates 4 to 6 inches wider than now contemplated. The top and bottom cover plates will have to be pulled in, cold, to the required curvature.

   It will be necessary to camber all arch members for a permanent dead load moment in addition to the axial force.

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Mr. Tom Edwards,
Assistant State Highway Engineer

June 18, 1968

The end bevels of the butting arch members will have to be calculated and fabricated to counteract a rotation due to the dead load moment induced by the curvature.

The curvature of the arch rib will have considerable effect upon the framing of the lateral bracing, therefore, all new details will have to be designed. This effect will also manifest itself in the fabrication and erection.

In resume, we wish to state that:

a. The arch members will of necessity have to be redesigned heavier by about 20% in order to accommodate the increased bending moments.

b. The fabrication will be more complex and this in turn has some effect upon the erection.

c. The cost of fabrication and erection will increase, but we are unable to say at this time to what extent.

We have made a very preliminary estimate as to what effect the redesign and redetailing of the structure will be upon engineering manpower, and the time to complete the superstructure contract if you should decide to make the arch members curved, instead of straight chords between panel points.

We have quickly outlined various divisions of the work involved and estimated the manpower for each function so that our approximate "guesstimate" for the total manpower required is 420 mandays. Setting the functions and this manpower requirement on a preliminary "critical path" diagram the additional time comes out to approximately four working months. This is a minimum effort and could be increased considerably if other areas of the bridge are effected by the arch changes.

In order that you may actually see what some similar bridges look like after they have been constructed, we are enclosing, herewith, photographs of three tied arches that our firm has designed. Also enclosed are three photographs of the Port Mann Bridge over the Fraser River in Vancouver, Canada. Please note that this bridge was fabricated as straight chords between panel points.

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Mr. Tom Edwards,
Assistant State Highway Engineer

June 18, 1968

We trust that there is sufficient information herein for your needs and judgment. Should you wish to discuss this problem further and in more detail, we are ready and willing to do so at your convenience.

Sincerely,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Alfred Hedefine
President

AH/mr
enclosures

cc: Mr. Ivan Merchant

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JUN 20 1968
OFFICE OF
STATE HIGHWAY ENGINEER

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JUN 21 1968

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, Inc.

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L. G. Silano

June 3, 1968

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7276 Fremont Bridge

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A meeting was held on Monday, May 27, 1968, in Salem, Oregon with members of the State Highway Department and the Bureau of Public Roads to discuss the progress on the Fremont Bridge. Those in attendance were:

Mr. Tom Edwards	-	Oregon State Highway Department
Mr. Ivan Merchant	-	
Mr. Len Wallace	-	
Mr. Theo. Roake	-	
Mr. Roy Tokerud	-	Bureau of Public Roads
Mr. Herb Schell	-	
Mr. L. G. Silano	-	Parsons, Brinckerhoff, Quade & Douglas

The following items were discussed in detail:

1. We should refer to the Oregon Standard AASHO Treatise (Interpretation of the AASHO Specs) and not to the AASHO Standard Specs on the General Note Sheet. This is because there are some differences between the two with reference to material and workmanship, and they want to avoid areas of conflict.

2. As they have no Supplementary Specifications concerning welding of ASTM A-514 Steels, we will have to write and include this in the Special Provisions of the specifications.

3. We are to include in the Special Provisions the complete ASTM Specifications for A-588 Steel.

4. Presently, they intend to award the superstructure contract in the first quarter of 1969.

5. I was asked at what time we could furnish them with completed plans and specs for their review. This, I felt, could be accomplished no sooner than the last week in July at best, which would leave us about 2 months for checking. Mr. Edwards said that this would be fine if we can do this, but he expressed the sentiment that he did not want us to rush the contract and sacrifice quality in order to meet this date.

NOTED
TOM EDWARDS

A. Hedefine

6. Mr. Edwards raised the question of the curvature of the arch rib. It was his impression that the arch rib should be curved instead of chorded between panel points. I explained that to curve the rib would hardly be necessary since it would not be discernible to the eye and, in addition, would add excessive fabrication costs. He evidently thought that the Port Mann Bridge was curved. Mr. Merchant advised him that arches which they have done have been chorded. I have a few photos of the Port Mann Bridge which I intend to send him, which clearly bring out this point and will allay his fears.

7. The prefabricated steel parapet and its relation to the drainage was discussed. It seems that they have modified the vertical dimension off the roadway from 4 to 2 inches. This would not accommodate our drainage and it was agreed that they would revert back to the previous 4 inches. They will inform Howard, Needles of this in order to have continuity on the approaches.

8. They now require that the longitudinal steel for the lower deck slab be spaced at closer intervals. They suggest #4 bars at 8" c.c.

9. Mr. Merchant asked if we had talked to any fabricators concerning the superstructure contract. I informed him that we had not talked with any fabricators primarily because in subsequent telephone conversations between he and Mr. Hedefine it was deemed inadvisable. He advised me that there evidently was a misunderstanding and that he did not object to this procedure; however, he did not want to be in the position of being publicly criticized for dealing only with a selected few. We, therefore, agreed that I would furnish him with a list of fabricators and erectors whom we think would be interested in this job, and he in turn would add to this list, whereupon all those on the list would be informed of the job and that if they expressed interest in the work, pre-bid conferences could be arranged for.

   We discussed where these conferences could be held, and Mr. Merchant advised that he would leave this entirely up to our discretion.

10. Mr. Merchant indicated that a job of this complexity required a minimum of six (6) weeks' bidding time.

11. Mr. Edwards said that no foreign steel, fabricators, or erectors will be permitted on this job. In the discussion that ensued, I gathered that this is contrary to normal practice and that special permission had to be secured from the Commissioners.

12. Mr. Edwards asked if we had any idea about what the construction time might be. I informed him that while we have not done any detailed studies on this question at this time, it was my opinion that the fabrication and erection would require a minimum of two years and that we would furnish him with an estimated construction time.

He then discussed with Mr. Merchant the completion of the East Approach as being critical, and therefore certain priority work be accomplished on the East Approach in order to give traffic service to the bridge.

13. Some discussion centered about the steel parapet and the fact that the rear face was open. Roy Tokerud of the Bureau expressed the opinion that this might create dark areas. Mr. Edwards advised me to look into this further and to see if we could completely enclose the parapet.

14. The next topic discussed concerned itself with sign structures, when Mr. Merchant presented copies of preliminary sketches he had received from Howard, Needles. They were evidently requesting permission to deviate from State standards in order to make the sign structures complementary with and harmonize with the aesthetics of the approach superstructure. I informed him that we had likewise taken the same approach as Howard, Needles concerning the one-sign structure exposed to view on the upper deck roadway of our contract, and that we had furnished him with complete details of our design. He stated that after he has completed his study of these he would advise further on this matter.

15. Mr. Merchant advised me that the sign panels for our sign bridges would be part of our contract, but that the State would perform the necessary work for inclusion in the contract.

16. Access to the air-beacons was next considered and it was decided that a handrail on the arch rib would not be necessary. Access should be through the arch rib, with silica-sand broadcast into the final paint coat.

A. Hadefine

17. The type of lamp post shown on our drawings is not what the State is currently using. We are to coordinate our lighting details with the approaches. With this in mind, Mr. Merchant advised me to contact Howard, Needles and obtain from them Sheet No. 52 and 53 of the approach contract.

Their preference is to have uniformity of fixtures, spacing, and details. They require a minimum average of 2 foot-candle lighting intensity with a 4 to 1 average to minimum foot-candle ratio. In this connection the approaches have 400 watt Type II fixtures spaced approximately 175 feet.

18. Mr. Merchant requested that we furnish them with two (2) additional sets of drawings.

19. The size of drain pipes is to be a minimum of 8" diameter. This is a requirement of their maintenance department. We are to use standard steel pipe galvanized and painted.

20. The question of deck joints was now considered.

The State agreed with the use of compression seals, but prefers the use of armored joints with them. They suggested 6 x 4 angles.

We were asked to consider eliminating the roadway joints from every floor beam to alternate floor beams in order to improve the riding qualities of the roadway surface. The deck slab would thus be continuous over two panels a total length of 89' - 8".

This ties itself into the problem of the flexibility of the structure and the desirability of articulating the lower roadway deck. We will study this problem and advise them later.

21. The railing for both the upper and lower roadways is to be aluminum only, with no option for a steel rail. We are calling for a "Fabco" pad under each post in contact with steel or concrete, and they concurred with this.

22. Mr. Merchant brought up the question of the paving system for the orthotropic deck. I advised him that we will be sending him a full report with recommendations.

23. Mr. Merchant asked about the painting system for this structure and what, if anything, is being done about it.

A. Hedefine

I advised him that at this time we have under consideration three systems, as follows:

(1) three-coat epoxy system.
(2) one-coat glass-flake epoxy system.
(3) inorganic zinc with high solids vinyl topcoat.

A discussion then ensued with descriptions, advantages, pros and cons, etc. of all three systems.

The question arose concerning the advisability of applying the finish coats of paint in the shop. The general consensus was that this would be inadvisable and that we should gear our paint specifications to prime coats applied in the shop with final coats applied in the field.

Everyone was in general agreement that at this time it would be advisable to develop our paint specifications along the lines of providing an option to the contractor for a three-coat epoxy system vs an inorganic zinc with a high solids vinyl topcoat.

24. I requested, and Mr. Merchant agreed to furnish us with one Mylar reproduction of Dwgs. 23668 and 23669 from the Pier Contract to be included as reference drawings in the Superstructure Contract.

Louis G. Silano

L. G. Silano

LGS/cc

cc: Mr. Ivan B. Merchant
Mr. T. Edwards

LGS-MEP-File

RECEIVED
JUN 17 1968
OFFICE OF
STATE HIGHWAY ENGINEER

STATE OF OREGON - STATE HIGHWAY DEPARTMENT

FREMONT BRIDGE - INTERSTATE ROUTE 405

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

WEEKLY PROGRESS REPORT

SUBSTRUCTURE CONTRACT

Report No. 44

Date February 2, 1968

	% Contract	% Job	% Complete
1. FOUNDATION INVESTIGATION	44.1	6.4	6.4
2. DESIGN	11.0	1.6	1.6
3. DETAILING	22.8	3.3	3.3
4. ESTIMATING	2.8	0.4	0.4
5. SPECIFICATIONS	11.7	1.7	1.7
6. SHOP DRAWINGS	7.6	1.1	---
	100%	14.5%	13.4

SUPERSTRUCTURE CONTRACT

	% Contract	% Job	% Complete
1. ANALYSIS AND DESIGN	24.6	21.0	20.5
2. DETAILING	35.1	30.0	15.3
3. INVESTIGATIONS, Wearing Surface (orthotropic), Wind, Dynamic Analysis, etc.	14.6	12.5	5.6
4. LIGHTING AND SIGNING	4.0	3.4	0.6
5. ESTIMATING	2.3	2.0	---
6. SPECIFICATIONS	2.7	2.3	0.3
7. SHOP DRAWINGS	16.7	14.3	---
	100%	85.5%	42.3

REMARKS:

(1) Con't. Superst. Details.

% COMPLETE TOTAL: 55.7

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DEC 8 - 1967
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Agenda
4g

November 10, 1967

MISC. CONTRACTS and AGREEMENTS No. 3769

Parsons, Brinckerhoff, Quade & Douglas, Inc.
111 John Street
New York, New York 10038

Attention: Mr. Alfred Nadolny

Gentlemen:

Enclosed for your files is a fully executed copy of a supplemental agreement providing for the design and preparation of plans for the main river crossing of the Fremont Bridge on I-405 in Portland.

A fully executed copy of this agreement has been retained for the Commission's files.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

lmr
Enc.

cc: C. H. Maisen
(2 xerox copies)

Ivan D. Merchant
(3 xerox copies)

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NOV 1 - 1967
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PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

October 24, 1967

F-405-8(17)303
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RECEIVED
OCT 27 1967
OFFICE OF
STATE HIGHWAY ENGINEER

Mr. Ivan D. Merchant,
Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge - Wind Tunnel Tests

Dear Mr. Merchant:

As of yesterday we culminated an agreement with the Naval Ship Research and Development Center's Aerodynamics Laboratory to perform a series of wind tunnel tests on models of the proposed Fremont Bridge. We have been negotiating to have this work performed for about two months.

The model designs, construction and tests will all be carried out by the NSR&D Center and its personnel. The work schedule includes testing a bridge model at the double deck roadway level and a second test model of a section of the Arch Rib with its K-type bracing. On both of these models the outline of tests to be performed includes:

1. Vertical angle of attack of $+5^{\circ}$ to -5° in 1° increments normal to the roadway.

2. 0° to 60° horizontal angle in 10° increments for angles of attack of $+5^{\circ}$, 0° and -5°. All of these tests would be conducted at wind velocities of 40, 80 and 120 mph.

We will keep you apprised of the progress of the testing as it is performed and should you or any of your staff desire to see these tests in some stages of their performance, we would be pleased to arrange for a visit to the NSR&D Center. Of course we expect to participate in viewing the model tests as well as in the preparation and reduction of the final data.

NOTED
TOM EDWARDS

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Mr. Ivan D. Merchant, Bridge Engineer October 24, 1967

If you have any further questions or comments, please advise me at your earliest convenience.

Very truly yours,

Alfred Hedefine

Alfred Hedefine

AH/mr

RECEIVED
OCT 6 - 1967
FOR FILING

I-405-8(17)303
7276

October 5, 1967

Oregon State Highway Commission

Gentlemen:

On September 21, 1966, the Commission entered into an agreement with Parsons, Brinckerhoff, Quade & Douglas, Inc., for the design and preparation of plans for the main river crossing of the Fremont Bridge on Interstate 405 in the city of Portland.

The Bureau of Public Roads has issued instructions on design features that are in the interest of increased traffic safety. One of these provides that the shoulder area on structures shall be the same as that on roads leading to the structure. This necessitates changing the plan on the above bridge so that the roadway width will be 68 feet rather than 59 feet as contained in the original agreement. As the design drawings are about 22 percent complete, this will add an estimated $44,500 to the design cost.

As this change is in line with a recent AASHO safety committee report and is also being sponsored by the Bureau of Public Roads, we recommend your approval of a supplemental agreement and request authority for the Secretary to sign the agreement for and on your behalf.

The matter will be on the agenda for the October 31 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc Floyd Query - Please furnish Bridge Division 8 copies of the completely executed agreement for distribution to the BPR and within the Department.

R. L. Porter
Tom Edwards
V. D. Wolfe
I. D. Merchant
L. H. Young
C. H. Maison
A. E. Johnson

RECEIVED
SEP 18 1967

SP*22037-734

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
September 8, 1967

I-405-8(17)3C3
7276

To: MEMO TO THE FILES

SUBJECT: Fremont Bridge Cost
Br. No. 2529

On the morning of Thursday, September 7, 1967, Louis Silano, Project Engineer for Parsons, Brinckerhoff, Quade & Douglas on the Fremont Bridge, called regarding a previous request to furnish us with a new cost of the structure with a widened roadway. Mr. Silano told me that their estimate was $25,000,000 of which $5,000,000 is substructure and $20,000,000 superstructure.

This estimate was not made from completed quantities and must be considered approximate only; however, it should be used for programming purposes until a better estimate can be provided.

Ivan D. Merchant
Bridge Engineer

IDM:mb

cc: Mr. Tom Edwards
Mr. L. H. Young
Mr. T. C. Roake

NOTED
TOM EDWARDS

RECEIVED
SEP 11 1967
OFFICE OF
STATE HIGHWAY ENGINEER

Copy for info → Cooper, Porter, Klaboe 9-11-67

2 copies sent 9-11-67 by

RECEIVED
AUG 31 1967
FOR FILING

GLENN L. JACKSON, CHAIRMAN
MEDFORD
WASCO
PORTLAND

I-405-8(17)303
7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

August 30, 1967

Parsons, Brinckerhoff, Quade & Douglas
111 John Street
New York City, New York

Att.: Mr. Louis G. Silano

Subject: Fremont Bridge
Br. No. 2529

Gentlemen:

For your information, I am including a set of plans for a storm sewer and building demolition contract along with the bidding proposal and the special provisions for the above project. This storm sewer is to be bid on September 28th and is the main outfall sewer for the Stadium Freeway storm drainage into the Willamette River. Any deck drainage on the structure west of the river can be connected to this storm sewer.

On Dwg. No. 23264 is indicated the removal of the existing Columbia Basin terminal building, rebuilding of access facilities thereto and indicates the alignment of a future retaining wall. This future retaining wall will be built under the pier contract to retain the fill around Pier 1W. It is our intention to fill to approximately elevation 33 at the face of the pier and slope to the retaining wall or to the river a minimum amount for surface drainage.

Also enclosed, are two prints indicating the proposed street revisions and revised railroad crossing in the vicinity of Pier 2W at 14th and Thurman Streets. One print is the print received from our Metropolitan office which indicates the grade crossing as well as the street revisions; however, the street revision from 14th to Thurman Street has been revised as indicated on the second sheet to provide more space between the west side of Pier 2W and the reconstructed street. Details for this work will be in the pier contract; however, the State Highway Department will provide the details to be added into the project plans to cover this work.

7124

NOTED
TOM EDWARDS

Please feel free to contact me if there is any item mentioned above which is not clear to you.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

IDM:mb
Enc.

cc: Mr. Tom Edwards

RECEIVED
AUG 30 1967
OFFICE OF
STATE HIGHWAY ENGINEER

FORM S-128X 50M 7-66

COMMISSIONERS
GLENN L. JACKSON, CHAIRMAN
MEDFORD
KENNETH N. FRIDLEY, MEMBER
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND

RECEIVED
AUG 2 1967

FOR FILING

I-405-8(17)505

7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

July 31, 1967

Parsons, Brinckerhoff, Quade & Douglas
111 John Street
New York City, New York 10038

Attention: Mr. L. G. Silano
Project Engineer

Subject: Fremont Bridge
Br. No. 2529

Gentlemen:

This will acknowledge copies of your letter of July 21, 1967, regarding redesign costs for the Fremont Bridge, together with supporting data as well as a copy of the Memorandum of Meeting held July 13th with the corrections to the memorandum of July 21st.

Your letter of July 21st revising the Memorandum of Meeting is satisfactory to the State with the floor system to be designed for six lanes of traffic on each level and the arch rib, tie girder and columns for five lanes on each level of traffic - all other requirements of the AASHO specification to be followed in the design.

7154

Please refer to Item 5 of your memorandum regarding an allowance for future fill around Pier 1W. For purposes of design, I believe the top elevation of this fill should be considered to be elevation 32.

Item 11 refers to Piers 2E and 2W and states that the architectural treatment has been finalized. Preliminary plans for the approaches have not been received from our consultant at this time. It is expected that the preliminary plans will be received by the middle of August at which time, a final determination as to approach pier shapes will be made. You will be advised at the earliest possible time if there are any changes over the plans sent you previously; however, the State expects your company to collaborate with the approach consultant, Howard, Needles, Tammen & Bergendoff, to the end that satisfactory details from the structural and architectural standpoints will be provided.

All other items covered by the Memorandum of the July 13th meeting agree with the State's interpretation.

NOTED
TOM EDWARDS

I am enclosing herewith, a print of the profile and deck layouts revised 7/20/67 to indicate that the profile is to apply at the FB 3 center line which will also become the lane center line for both top and bottom decks.

The material covering your estimate of redesign costs seems to be in order and is acceptable to the State. This material is being sent to the Bureau of Public Roads for their concurrence and in the near future, we will furnish you with copies of a supplemental agreement for signatures.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

IDM:mb
Enc.
cc: Mr. Tom Edwards

RECEIVED
AUG 1 - 1967
OFFICE OF
STATE HIGHWAY ENGINEER

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N. Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

July 21, 1967

Mr. Forrest Cooper,
State Highway Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Re-design Costs - Fremont Bridge

Dear Mr. Cooper:

On Thursday, July 13, 1967 Messrs. Fiore, Silano and myself met with your representatives in Salem, to discuss the subject of re-working certain portions of the design on the proposed Fremont Bridge over the Willamette River. Messrs. Schell and Stevenson of the Bureau of Public Roads were also in attendance.

On June 15, 1967 we received instructions from Mr. Edwards to stop the design work of the bridge based on a 59 foot roadway, and to prepare to advise you as to what effort would be necessary to bring the work to the same stage of completion for a revised roadway width of 68 feet.

Subsequent to the meeting of July 13th, we have had several telephone conversations with Mr. Merchant, and in keeping with these we are submitting at this time our estimates of costs and fee to perform the re-design involved. We have been proceeding on the re-design work since June 15th, and two copies each of "Weekly Progress Reports" No. 15 (Revised) dated June 16, 1967 and No. 16, dated July 21, 1967 indicate the progress made. Also, two copies of the original Progress Report No. 15, dated June 16th, previously submitted, are included, thereby presenting the entire picture more clearly.

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Mr. Forrest Cooper July 21, 1967

We are also enclosing two copies each of the following:

1. "Manpower" required to re-work the calculations and drawings.
2. "Cost Summary" including labor, out-of-pocket expenses and work assignments.
3. "Fee" calculation in the total amount of $64,500.

We are, as you know, expediting this re-design work, as well as continuing with the other phases of the project. The estimated schedule of completion dates of the contracts remains the same as we concluded in our discussions on July 13th, and is as follows:

Substructure

1.	Preliminary Submission of Contract Plans and Specifications	October 1, 1967
2.	Final Submission of Contract Plans and Specifications	December 1, 1967

Superstructure

1.	Preliminary Submission of Contract Plans and Specifications	February 1, 1968
2.	Final Submission of Contract Plans and Specifications	June 1, 1968

In any event we will furnish completed plans two (2) months after receipt of all comments and revisions for both contracts.

We trust that the foregoing information is satisfactory.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Alfred Hedefine

Alfred Hedefine

AH/mr
enclosures

cc: Mr. T. Edwards w/encls.
Mr. I. D. Merchant w/encls.

STATE OF OREGON - STATE HIGHWAY DEPARTMENT

FREMONT BRIDGE - INTERSTATE ROUTE 405

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

WEEKLY PROGRESS REPORT

SUBSTRUCTURE CONTRACT

Report No. 15

Date June 16, 1967

	% Contract	% Job	% Complete
1. FOUNDATION INVESTIGATION	44.1	6.4	6.4
2. DESIGN	11.0	1.6	0.9
3. DETAILING	22.8	3.3	0.2
4. ESTIMATING	2.8	0.4	---
5. SPECIFICATIONS	11.7	1.7	---
6. SHOP DRAWINGS	7.6	1.1	---
	100%	14.5%	7.5%

SUPERSTRUCTURE CONTRACT

	% Contract	% Job	% Complete
1. ANALYSIS AND DESIGN	24.6	21.0	13.1
2. DETAILING	35.1	30.0	1.3
3. INVESTIGATIONS, Wearing Surface (orthotropic), Wind, Dynamic Analysis, etc.	14.6	12.5	0.1
4. LIGHTING AND SIGNING	4.0	3.4	----
5. ESTIMATING	2.3	2.0	----
6. SPECIFICATIONS	2.7	2.3	0.3
7. SHOP DRAWINGS	16.7	14.3	----
	100%	85.5%	14.8

REMARKS:
1. Completed successful wind analysis
2. Continued with design & detailing
3. Designing substructure
4. Halted present design - because of new roadway width criteria

% COMPLETE TOTAL: 22.3

STATE OF OREGON - STATE HIGHWAY DEPARTMENT

FREMONT BRIDGE - INTERSTATE ROUTE 405

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

WEEKLY PROGRESS REPORT

SUBSTRUCTURE CONTRACT

Report No. 15 (Revised)

Date June 16, 1967

	% Contract	% Job	% Complete
1. FOUNDATION INVESTIGATION	44.1	6.4	6.4
2. DESIGN	11.0	1.6	0.3
3. DETAILING	22.8	3.3	0.0
4. ESTIMATING	2.8	0.4	---
5. SPECIFICATIONS	11.7	1.7	---
6. SHOP DRAWINGS	7.6	1.1	---
	100%	14.5%	6.7

SUPERSTRUCTURE CONTRACT

	% Contract	% Job	% Complete
1. ANALYSIS AND DESIGN	24.6	21.0	4.0
2. DETAILING	35.1	30.0	0.2
3. INVESTIGATIONS, Wearing Surface (orthotropic), Wind, Dynamic Analysis, etc.	14.6	12.5	0.1
4. LIGHTING AND SIGNING	4.0	3.4	---
5. ESTIMATING	2.3	2.0	---
6. SPECIFICATIONS	2.7	2.3	0.3
7. SHOP DRAWINGS	16.7	14.3	---
	100%	85.5%	4.6

REMARKS: This progress report revises Progress Report No. 15 to account for the loss of progress resulting from changing the width of roadway from 59 feet to 68 feet.

% COMPLETE TOTAL: 11.3

STATE OF OREGON - STATE HIGHWAY DEPARTMENT

FREMONT BRIDGE - INTERSTATE ROUTE 405

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

WEEKLY PROGRESS REPORT

SUBSTRUCTURE CONTRACT

Report No. 16

Date July 21, 1967

	% Contract	% Job	% Complete
1. FOUNDATION INVESTIGATION	44.1	6.4	6.4
2. DESIGN	11.0	1.6	1.1
3. DETAILING	22.8	3.3	---
4. ESTIMATING	2.8	0.4	---
5. SPECIFICATIONS	11.7	1.7	---
6. SHOP DRAWINGS	7.6	1.1	---
	100%	14.5%	7.5

SUPERSTRUCTURE CONTRACT

	% Contract	% Job	% Complete
1. ANALYSIS AND DESIGN	24.6	21.0	6.6
2. DETAILING	35.1	30.0	0.2
3. INVESTIGATIONS, Wearing Surface (orthotropic), Wind, Dynamic Analysis, etc.	14.6	12.5	0.1
4. LIGHTING AND SIGNING	4.0	3.4	---
5. ESTIMATING	2.3	2.0	---
6. SPECIFICATIONS	2.7	2.3	0.3
7. SHOP DRAWINGS	16.7	14.3	---
	100%	85.5%	7.2

REMARKS: (1) Designing Piers 1E & 1W
(2) Analyzing Superstructure for Dead & Live Loads

% COMPLETE TOTAL: 14.7

July 20, 1967

MANPOWER

required to rework the calculations and drawings of the Fremont Bridge to bring them to the same stage of completion for the revised 68 ft. roadway as existed on the original 59 ft. roadway on June 15, 1967.

DESCRIPTION	MAN-DAYS REQUIRED			Professional and Technical Grades (Man-Days)						TOTALS
	DESIGN	DRAFT	CHECK	C	II	IV	V	VI	VII	
				RK	M.F. R.A	R.M. D.B	J.M. A.G.	J.S. C.T.	L.S	
I SUBSTRUCTURE										
1) PIERS	19	7	-	7			3	16		26
2) WALLS (PLANS, SPECS AND SHOP DRAWINGS)	8	6	13	6			11	10		27
II SUPERSTRUCTURE										
A) PRELIMINARY DESIGN										
1) DEAD LOAD STRESSES (prorated)	2	-	1			2		1		3
2) LIVE LOAD STRESSES (utilize previous Infl. lines)	20	-	7		6	14	2	2	3	27
3) DESIGN AND SECTIONING OF MEMBERS — ARCH MEMBERS	3	-	1			3		1		4
GIRDER	17	-	7		5	12	3	2	2	24
COLUMNS	5	-	2			4		2	1	7
ORTHOTROPIC DECK (including FB & Diaph)	10	-	6				6	8	2	16
GIRDER STIFF. & Diaph. (ESTIMATE)	2	-	1			2		1		3
Arch Bracing	10	-	5			7	3	3	2	15
Lower Level - Deck (Final Design)	2	1	1	1	1	2				4
" " - Floorbeam (Final Design)	5	-	2		2	4			1	7
" " - stringers (Final Design)	3	1	2	1	2	3				6
" " - hangers & connections	3	-	1		1	2			1	4
" " - Bracing	4	-	2			4		2		6
4) DETERMINE NEW PANEL POINT DEAD LOADS	20	-	7		14	5	5		3	27
B) FINAL DESIGN										
1) DEAD LOAD ANALYSIS - NEW GEOMETRY for D.L.	10	-	6			8		5	3	16
DEAD LOAD STRESSES	15	-	7			15		5	2	22
2) LIVE LOAD ANALY. (NEW Infl. lines from computer)	20	-	7			15	4	4	4	27
3) LIVE LOAD STRESSES — From Computer OUTPUT — Arch stresses	5	-	3			5	1	2		8
Girder "	17	-	7		5	10	2	4	3	24
Column "	6	-	3			6		2	1	9
Reactions & Deflection	5	-	2		2	4		1		7
4) DESIGN AND SECTIONING OF MEMBERS — ARCH MEMBERS	10	5	5			10	7	2	1	20
Column "	7	5	4			10	5	1		16
ARCH-COLUMN CONNECTIONS	2	5	1				5	2	1	8
GIRDER-Column CONNECTIONS	2	5	1				5	2	1	8
GIRDER SECTIONS	20	4	10	4	9	12	5	2	2	34
" - SPLICES (HORIZ & VERT)	10	8	-	8		5	2	3		18
" - STIFFENERS	5	-	-			2	1	1	1	5
" - ARCH CONNECTIONS	5	1	-	1		2	1	1	1	6
" - ORTHO DECK CONN.	2	1	-	1			1	1		3
" - WEBS	3	1	-	1		1	1	1		4
LOWER LEVEL - WIND CH'D & BRAC.	10	1	-			7	1	2	1	11
C) WIND ANALYSIS - SECT PROP. & GEOM.	20	-	10		7	10	8	2	3	30

required to rework the calculations and drawings of the Fremont Bridge to bring them to the same stage of completion for the revised 68 ft. roadway as existed on the original 59 ft. roadway on June 15, 1967.

DESCRIPTION	MAN-DAYS REQUIRED			Professional and Technical Grades (Man-Days)						TOTALS
	DESIGN	DRAFT	CHECK	C	II	IV	V	VI	VII	
				RK	M.F. R.A	R.M. D.B.	J.M. A.G.	J.S. C.T.	L.S	
I SUBSTRUCTURE										
1) PIERS	19	7	-	7			3	16		26
2) WALLS (PLANS, SPECS AND SHOP DRAWINGS)	8	6	13	6			11	10		27
II SUPERSTRUCTURE										
A) PRELIMINARY DESIGN										
1) DEAD LOAD STRESSES (prorated)	2	-	1			2		1		3
2) LIVE LOAD STRESSES (utilize previous Infl. lines)	20	-	7		6	14	2	2	3	27
3) DESIGN AND SECTIONING OF MEMBERS — ARCH MEMBERS	3	-	1			3		1		4
GIRDER	17	-	7		5	12	3	2	2	24
COLUMNS	5	-	2			4		2	1	7
ORTHOTROPIC DECK (including FB & Diaph)	10	-	6				6	8	2	16
GIRDER STIFF. & Diaph. (ESTIMATE)	2	-	1			2		1		3
Arch Bracing	10	-	5			7	3	3	2	15
Lower Level - Deck (Final Design)	2	1	1	1	1	2				4
" " - Floorbeam (Final Design)	5	-	2		2	4			1	7
" " - stringers (Final Design)	3	1	2	1	2	3				6
" " - hangers & connections	3	-	1		1	2			1	4
" " - Bracing	4	-	2			4		2		6
4) DETERMINE NEW PANEL POINT DEAD LOADS	20	-	7		14	5	5		3	27
B) FINAL DESIGN										
1) DEAD LOAD ANALYSIS - NEW GEOMETRY for D.L.	10	-	6			8		5	3	16
DEAD LOAD STRESSES	15	-	7			15		5	2	22
2) LIVE LOAD ANALY. (NEW Infl. lines from computer)	20	-	7			15	4	4	4	27
3) LIVE LOAD STRESSES — From Computer OUTPUT — Arch stresses	5	-	3			5	1	2		8
Girder "	17	-	7		5	10	2	4	3	24
Column "	6	-	3			6		2	1	9
Reactions & DEFLECTION	5	-	2		2	4		1		7
4) DESIGN AND SECTIONING OF MEMBERS — ARCH MEMBERS	10	5	5			10	7	2	1	20
Column "	7	5	4			10	5	1		16
ARCH-COLUMN CONNECTIONS	2	5	1				5	2	1	8
GIRDER-Column CONNECTIONS	2	5	1				5	2	1	8
GIRDER SECTIONS	20	4	10	4	9	12	5	2	2	34
" - SPLICES (HORIZ & VERT)	10	8	-	8		5	2	3		18
" - STIFFENERS	5	-	-			2	1	1	1	5
" - ARCH CONNECTIONS	5	1	-	1		2	1	1	1	6
" - ORTHO DECK CONN.	2	1	-	1			1	1		3
" - WEBS	3	1	-	1		1	1	1		4
Lower Level - WIND CH'D & BRAC.	10	1	-			7	1	2	1	11
C) WIND ANALYSIS - SECT. PROP. & GEOM.	20	-	10		7	10	8	2	3	30
- LOADINGS	2	-	1			2		1		3
- INPUT SHEETS, ETC	10	-	7		5	10		2		17
III TOTALS (MAN-DAYS NOT INCLUDING D.H. SUPV.)	319	51	132	30	59	198	82	94	39	502

PARSONS BRINCKERHOFF ... DE & DOUGLAS INC

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
COMPUTATION SHEET

Subject FREMONT BRIDGE
COST SUMMARY

Page ____ of ____
Made by Silano
Date
Checked by
Date

LABOR COSTS BASED ON
AVERAGE DAILY SALARY RATES AND GRADES
FOR MEN ASSIGNED TO THIS PROJECT

I DIRECT LABOR
Professional & Tech. Grades

1)	Grade	C (R.K.)	30 M-D	@	34.00	=	1020
2)	"	II (M.F. R.A.)	59 M-D	@	32.00	=	1888
3)	"	IV (R.M. D.B.)	198	@	37.00	=	7326
4)	"	V (J.M, A.G.)	82	@	46.00	=	3772
5)	"	VI (J.S. C.KT.)	94	@	48.00	=	4512
6)	"	VII L.S	39	@	58.00	=	2262
7)		VIII M.EF	8	@	80.00		640
		TOTAL	510			#	21420 DIR. LABOR

II Computer (OUT-OF-HOUSE) # 1800

III Out-of-POCKET Expenses # 1700
TRAVEL, MISC.

Wall problem @ PIER 1W (WIDENED STRUCTURE necessitates including WALL DESIGN)

WORK ASSIGNMENTS

NAME	GRADE	ASSIGNMENTS
ROBERT KINSLEY	C	DRAFTING
MICHAEL FISHER	II	GEOMETRY, LOADS, INFLUENCE LINES ET
RUBEN MANUELYAN	IV	SPECIAL ANALYSIS, WIND, VIBRATION, BRACI
DALGIT BAIS	IV	ANALYSIS, INF. LINES, GEOMETRY
JAMES MARTIN	V	STRUCTURAL DETAILING
AHMET GURSOY	V	COMPUTER STUDIES, I.L. WIND STUDIES
JOHN SWINDLEHURST	VI	STRUCTURAL DESIGN, SECTIONING, ORTHOTROPIC DECK, ANALYSIS
C.K TU	VI	FOUNDATIONS
L.G. SILANO	VII	PROJECT ENGINEER - SUPERVISION
M.E FIORE	VIII	HEAD, DIV. OF STRUCTURES ~ SUPER.

GEN-1-25M1299

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, Inc.
COMPUTATION SHEET

Subject FREMONT BRIDGE
Costs For Re-design

Page ____ of ____
Made by LH
Date 7/20/67
Checked by
Date

Direct Payroll Cost

Direct Payroll	$21,420	
Escalation	880	
Contingency	2,200	
Total D.R.C.	$24,500	
Payroll	$24,500	
100%	24,500	
		$49,000
O.P.E.		3,500
		$52,500
Profit		12,000
		$64,500 ←

GEN-1-25M 1259

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAP NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

July 21, 1967

Mr. Ivan D. Merchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Dear Sir:

This is to amend Item (13) of my memo dated July 19, 1967 concerning the minutes of our conference meeting of July 13, 1967. This change was brought about by our telephone conversation of July 20, 1967 in which you advised us that Mr. R. Tokerud, Division Bridge Engineer, Bureau of Public Roads, expresses the opinion that the live load design criteria for the Fremont Bridge should be based on 5 lanes of traffic for both the upper and lower roadways, in lieu of the six lanes discussed in Item (13) of my memo.

In accordance with your instructions, we are proceeding to revise the design of the structure for live load in the following manner:

(1) For the main structure including the arch rib, tie girder and columns - 5 lanes of traffic per roadway.

(2) For the floor system - 6 lanes of traffic.

Would you please verify that the above criteria is in accordance with your approval.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

Louis G. Silano

L. G. Silano
Project Engineer

LGS/co

cc: Mr. T. Edwards
Assistant State Highway Engineer

RECEIVED
STATE HIGHWAY DEPT.
BRIDGE DIVISION
AM JUL 24 1967 PM
7,8,9,10,11,12,1,2,3,4,5,6

MEMORANDUM

TO: FILES

DATE: JULY 19, 1967

FROM: L. G. SILANO

JOB NO. 2045-B020

SUBJECT: FREMONT BRIDGE - PORTLAND OREGON

A meeting was held on Thursday, July 13, 1967 in the office of the Oregon State Highway Department in Salem, Oregon. Those in attendance were:

Mr. Ivan Merchant	Bridge Engineer Oregon State Highway Department
Mr. Herbert A. Schell	Area Engineer (Bureau of Public Roads)
Mr. Stevenson	Bureau of Public Roads
Mr. A. Hedefine	Parsons,Brinckerhoff,Quade & Douglas
Mr. M. Fiore	Parsons,Brinckerhoff,Quade & Douglas
Mr. L. G. Silano	Parsons,Brinckerhoff,Quade & Douglas

The purpose of this meeting was to review progress on the project and to evaluate what extra costs are involved and what delays are incurred because of a revision in bridge geometrics.

The following items were discussed and resolved as noted below:

1. The shoulders for the roadway will be revised to 10 foot on the right and left. The bridge cross-section is now perfectly symmetrical and we suggested that we revert back to the FB3 line as the centerline of bridge. The old profile line with a PVI ELEV. 242.78 at the center line of the main span will be retained but will now apply to the FB3 line.

   Mr. Merchant will revise the profile drawing 10M-118 and furnish prints to us.

2. We presented drawings showing our progress as of June 15, 1967. All of this work was performed prior to the geometry change. Mr. Merchant informed us that it would not be necessary for us to furnish him with a set of these drawings.

3. A general discussion centered about Bureau of Public Roads memorandum on Design of Bridge Deck Slabs dated June 21, 1967. We were instructed by Mr. Merchant and agreed to by Bureau Representatives to use for design purposes $f_c = 1320$ psi and to specify $f'_c = 4000$ psi concrete.

4. The problem of the fire-wall interference with Pier 1W was introduced. We sumbitted two sketches showing how we intend to handle the situation.

   In our original proposal Pier 1W was to be designed to avoid

MEMO

interference with the fire-wall and the construction of Pier 1W could proceed without alteration to the fire-wall.

Mr. Hedefine explained that extra work was involved beyond the scope of our contract due to the fact that the bridge has been widened and the elevation of the footing lowered.

Mr. Merchant agreed and suggested that we include this extra work with the cost for the redesign.

Possible Ext. to Nov. 32

5. Due to some regrdding at Front Street in the vicinity of Pier 1W, Mr. Merchant asked that we design this pier for an allowance of 5 feet minimum depth of fill over and above the existing ground line.

6. Mr. Hedefine stated that we would bill the State Highway Department for 22.3% completion as of June 16, 1967 lessthe usual retainer. ✓

7. It was resolved that we will issue a revised progress report of the previously issued June 16, 1967 progress report. This report will ✓ indicate the true progress with respect to the revised structure.

We will also issue another progress report which will indicate progress accrued from June 16, 1967 to the present.

8. The question of delays in the Time Scheduling of the contract plans was discussed. The following new dates were offered:

<u>Substructure</u>

1.	Preliminary Submission of Contract Plans & Specifications	Oct. 1, 1967 ✓
2.	Final Submission of Contract Plans & Specifications	Dec. 1, 1967 ✓

This permits opening bids on Jan. 30, 1968. ✓

<u>Superstructure</u>

1.	Preliminary Submission of Contract Plans & Specifications	Feb. 1, 1968
2.	Plans Returned with Comments	April 1, 1968 ✓
3.	Final Submission of Contract Plans & Specifications	June 1, 1968 ✓

This permits opening bids on Aug. 1, 1968 ✓

MEMO

In the case of both the Substructure and Superstructure Contracts, we will furnish completed plans two (2) months after receipt of all comments and revisions.

9. Mr. Merchant requested that we furnish him with a revised construction cost for the structure which is necessary for the financial scheduling of their highway program.

10. We informed those present that we have verbal confirmation from Mr. Charles T. Scheffey of the Bureau of Public Roads, that model testings will be done in the wind tunnel at the David Taylor Model Basin. The primary purpose of the testing will be to determine drag coefficients and centers of pressure.

11. After examining sketches of the approaches, it was deemed advisable to provide separate bearings for the approach superstructure at Piers 2E & 2W.

Mr. Merchant informed us that the architectural treatment of the approaches is finalized and we are to conform to the sketches sent to us.

12. We discussed the foundation of Piers 1E & 1W, and resolved that in the case of Pier 1E we would detail the footing to be poured in the dry and against undisturbed earth. We also are to provide rip-rap as a protection against possible scour.

13. We next discussed the Live Load Design Criteria. We informed those present that we are proceeding with the design of the widened structure for 6 lanes of traffic applied simultaneously on both roadways with the applicable AASHO reduction factors.

Mr. Merchant and the Bureau Representatives agreed that the design of the roadway for six lanes was in conformance with AASHO and that our application of the loading was acceptable to them.

Louis G. Silano

L. G. Silano
Project Engineer

cc: A. Bedefine
I. Merchant

RECEIVED
CONNECTICUT STATE HIGHWAY DEPT.
BRIDGE DIVISION
A.M. JUL 24 1967 P.M.
7,8,9,10,11,12,1,2,3,4,5,6

RECEIVED
JUL 24 1967
FOR FILING

FORM E-123
COMMISSIONERS
GLENN L. JACKSON, Chairman
MEDFORD
KENNETH N. FRIDLEY, Member
WASCO
DAVID B. SIMPSON, Member
PORTLAND

I-405-8(17)303
7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

July 5, 1967

Parsons, Brinckerhoff, Quade & Douglas, Inc.
111 John Street
New York, New York 10038

Attention: Mr. A. Nedefine

Gentlemen:

Re: Fremont Bridge
Bridge No. 2529

Enclosed herewith please find a copy of a memorandum dated June 21, 1967, from the Bureau of Public Roads regarding the design of bridge deck slabs. This memorandum is for your information only as I am sure we have covered this item previously in some of our conferences.

To summarize, the minimum thickness of deck slabs shall be 7 inches and with working stresses for concrete and reinforcing steel as per our design manual; however, the special provisions will require a minimum 28-day concrete strength of 4,000 psi and with a w/c ratio to limit the slump to 2½ inches.

Also enclosed is a copy of a memorandum dated June 30, 1967, from the Bureau of Public Roads approving the 10 foot shoulders.

7/24
I am also enclosing two prints of sketches prepared by Howard, Needles, Tammen & Bergendoff for the east and west Fremont approaches and piers 2E and 2W. As mentioned before, it is the State's desire that piers 2E and 2W conform to the adjacent approach piers. It is suggested that at such time as you are ready to design these piers and prepare details that you contact the approach consultants for loads, box girder spacing and other details of design.

During our telephone conversation today you thought it possible that Thursday of next week, July 13, could be a possible meeting date in Salem to discuss details of the design changes, times, etc., on this project. I will expect a telephone call from you early in the week of July 10th confirming the proposed meeting.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

IDM:ew
Encs.
cc: L. G. Silano
Tom Edwards

RECEIVED
JUL 7 1967
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUN 23 1967
FOR FILING

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC
111 JOHN STREET, NEW YORK, N.Y. 10038 TELEPHONE (212) 233-6300
CABLE: PARKLAT NEW YORK • TELEX WU 1-2403 • RCA 222 117

ENGINEERS

I-405-8(17)303
7276

June 15, 1967

Mr. Tom Edwards,
Assistant State Highway Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Roadway Widths

Dear Mr. Edwards:

This letter is to confirm our telephone conversation as of yesterday in which you informed us that the total roadway widths for the proposed Fremont Bridge are to be increased from 59 feet to 68 feet (four 12' lanes plus two 10' shoulders).

We are proceeding immediately on the basis of this change in design criteria. This change will materially effect the work that we have done to date.

After making a study of the effect of this design criteria we will inform you of the extent of the work that has to be done over.

Very truly yours,

Alfred Hedefine

AH/mr

Copy - Memorandum 6-22-67

NOTED
TOM EDWARDS

RECEIVED
JUN 19 1967
OFFICE OF
STATE HIGHWAY ENGINEER

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JUN 12 1967
FOR FILING

COMMISSIONERS
GLENN L. JACKSON, CHAIRMAN
MEDFORD
KENNETH N. FRIDLEY, MEMBER
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND

I-405-8(17)3C3
17276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

June 8, 1967

Parsons, Brinckerhoff, Quade & Douglas
111 John Street
New York City, New York 10038

Attention: Mr. Louis G. Silano

Subject: Fremont Bridge
Interstate 405

Gentlemen:

Enclosed herewith, please find a copy of a report entitled "Effect of the Fremont Bridge Upon Railroad Operations". This report was prepared by Mr. James W. Diffenderfer, acting as consultant on railroad matters for the Highway Department.

I am sending you this report as it covers railroad operations in the neighborhood of Pier 2W at the intersection of 14th and Thurman Streets and because of the interference with an industry spur with Pier 2E.

As noted in the report, an alternate railroad layout "D" is proposed immediately west of Pier 2W. It will be necessary to have this crossing and the street revisions on 14th and Thurman Streets in operation prior to the start of any construction on Pier 2W. The State will prepare the details for the street work and at such time as an agreement is finalized with the railroad companies, the crossing installation construction will be resolved. This rail crossing will not be a part of the contract nor will the relocation of the spur track on the east side of the river at Pier 2E.

The enclosed report is a report to the Highway Department and does not necessarily mean that the railroad has approved the recommendations in the report. The report is sent you to provide information for contract specifications.

Very truly yours,

NOTED
TOM EDWARDS

Ivan D. Merchant
Bridge Engineer

RECEIVED
JUN 9 1967
OFFICE OF
STATE HIGHWAY ENGINEER

IDM:mb
Enc.
cc: Tom Edwards
T. W. Litchfield
Jay Barbee

FORM E-1233 50M 2-66

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JUN 1 1967
FOR FILING

COMMISSION MEMBERS
GLENN L. JACKSON, CHAIRMAN
MEDFORD
KENNETH J. HARDIE, MEMBER
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND

I-405-8(17)303
7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

May 26, 1967

Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York City, New York 10006

Attention: Mr. Louis G. Silano

Subject: Fremont Bridge
Interstate 405
Illumination and Signing

Gentlemen:

In order that signing and illumination details may be designed and detailed, you recently requested certain material from the Highway Department.

I am enclosing a copy of a letter dated May 17th from the Assistant Traffic Engineer which indicates the design criteria for roadway lighting.

Also enclosed, are five unnumbered sheets indicating the proposed signing layout for the main river portion of the Fremont Bridge as well as the approaches. The sign details indicate the location and sign size only. The sign message will be determined at a later date and these details will be furnished you as soon as possible; however, the enclosed material should permit you to proceed with the design and detailing of the signs and sign supports.

For your reference and to indicate the equipment used by the State as well as typical sign details, I am enclosing copies of the proposal and of the contract for the signing of a typical interstate job in Eugene - our Contract No. 6985.

Also enclosed, are single prints of the following drawings covering the signing details for Contract No. 6985. These sheets are:

1, 2C, S-491, S-1, S-2, S-5, S-14, S-15, S-16, Structural Dwgs. Nos. 22478, 22533, 21353 through 21356 and 22848.

Identical copies of the above-mentioned material are being sent to Howard, Needles, Tammen & Bergendoff, the Fremont approach consultants for their use in signing and lighting of their portion of the project.

NOTED
TOM EDWARDS

It is desired that you coordinate your work with the approach consultants to the end that the overall project will indicate the same standards of lighting and equipment and that the signing details will also be similar.

Please advise if there is anything further that we can furnish you on this project.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

IDM:mb
Encls.
cc: Tom Edwards
L. E. George

RECEIVED
MAY 29 1967
OFFICE OF
STATE HIGHWAY ENGINEER

FORM S-30 REV 10-66 SP*25401-734

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
May 17, 1967

To: I. D. Merchant
Bridge Engineer
B U I L D I N G

SUBJECT: Illumination & Signing
Fremont Bridge & Interchanges
I405 - Portland

In response to your request, there are attached materials concerning signing and lighting on the Fremont Bridge and its approaches.

In regard to signing, there is a sample set of plans and special provisions including the detail sheets used on signing contracts. Also included are sign locations and sign sizes for all guide signs. The messages for the guide signs have not been determined. All guide signs should be illuminated. The sign illumination should be metered separately from the roadway illumination.

The roadway lighting should be mercury-vapor with clear lamps. The upper deck illumination should have metal poles with single tapered upsweep mast arms and a minimum mounting height of 28 feet. Poles should not be used on the lower deck. The mast should be attached to the bridge framework.

The roadway illumination should be designed for an average initial foot-candle intensity of 4 foot-candles on the lower deck and 2.5 foot-candles on the upper deck. The initial foot-candle ratio on the roadway should be from 2:1 to 4:1. The luminaire units should have integral ballasts.

For power services, it is suggested that a Pacific Power & Light source on the south side of the bridge at Pier 2E (Sta. 346+24) be used for all units on the south side of the structure and a Portland General Electric source on the north side at Pier 2W (Sta. 367+76) be used for all units on the north side of the structure. The meter should be placed on the power company transformer pad or pole as directed by the power company.

NOTED
I. D. MERCHANT

L. E. George
Assistant Traffic Engineer

VPJ:hm
Attachments

COMMISSIONERS
GLENN L. JACKSON, CHAIRMAN
KENNETH N. FRIDLEY, MEMBER
DAVID B. ROBERTSON, MEMBER
PORTLAND

I-405-8(17)303
7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

April 11, 1967

Lp

Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York City, New York 10006

5554

Attention: Mr. Louis G. Silano

Subject: Fremont Bridge
Br. No. 2529
Navigation Lighting

Gentlemen:

Approval of the navigation lighting for the Fremont Bridge has been received from the 13th Naval District. I am enclosing a copy of their letter, together with Xerox copies of Sheets 1 and 2 which you submitted to us for transmission to the Coast Guard.

At this date, we have not heard from the FAA regarding the air obstruction lighting. You will be notified as soon as the FAA has replied to our request.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

IDM:mb
Encls.
cc: Mr. Tom Edwards

NOTED
TOM EDWARDS

NOTED
VICTOR D. WOLFE

RECEIVED
APR 12 1967
OFFICE OF
STATE HIGHWAY ENGINEER

DEPARTMENT OF TRANSPORTATION

UNITED STATES COAST GUARD

5187

Address reply to:
COMMANDER (oan)
13TH COAST GUARD DISTRICT
618 SECOND AVENUE
SEATTLE, WASHINGTON 98104

APR 10 67

Edwards

3267/534A
6 April 1967
Ser: (166)

Forrest Cooper, State Highway Engineer
State of Oregon Highway Department
Salem, Oregon 97310

Dear Mr. Cooper:

Enclosed is an approved copy of navigation bridge lighting for the Fremont Bridge across the Willamette River at Portland, Oregon. Please advise this office when the bridge has been completed, and the navigation bridge lights are installed and operating.

It is requested that the bridge contractor be made aware of his responsibility for contacting the Coast Guard regarding temporary construction lights and markings, and that this fact be made known in the contract.

Sincerely yours,

Victor Koll

VICTOR KOLL
Commander, U. S. Coast Guard
Chief, Aids to Navigation Branch
By direction of the District Commander

Encl: (1) Approved bridge lighting
(sheets 1 & 2)

RECEIVED
APR 12 1967
OFFICE OF
STATE HIGHWAY ENGINEER

Copy Merchant
Pl. hand E

NOTED
IVAN D. MERCHANT

RECEIVED
APR 7 1967
OFFICE OF
STATE HIGHWAY ENGINEER

Keep Freedom in Your Future With U.S. Savings Bonds

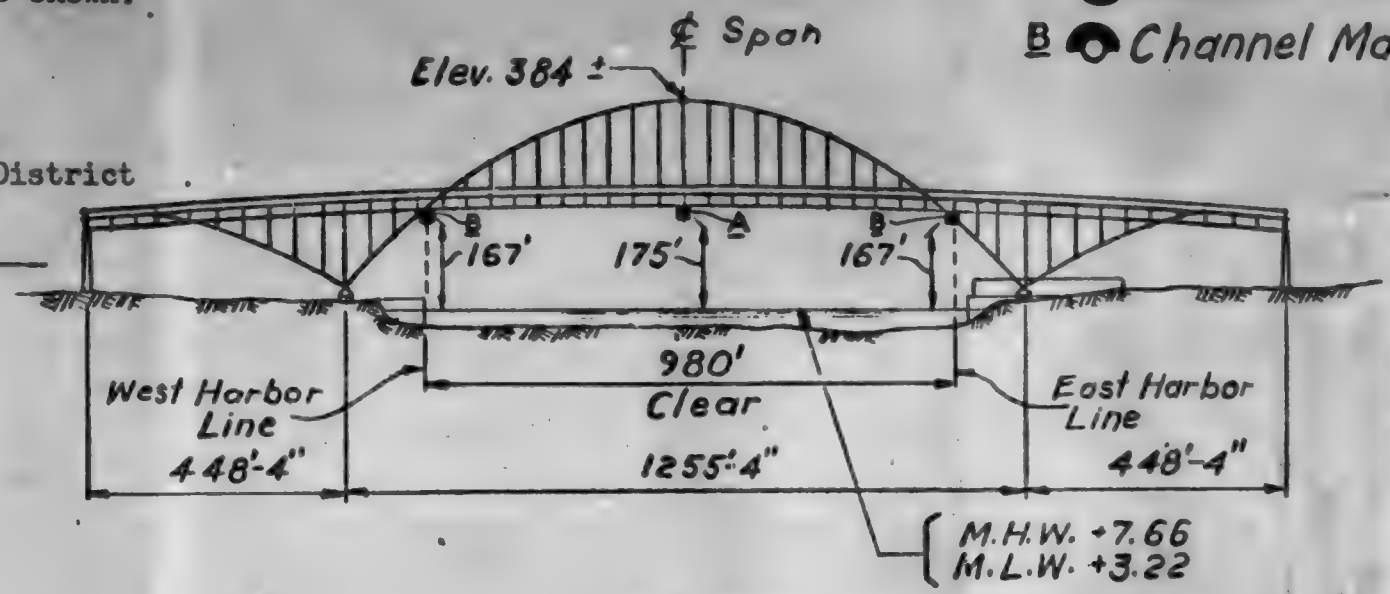
Navigation lights approved as shown.

6 April 1967

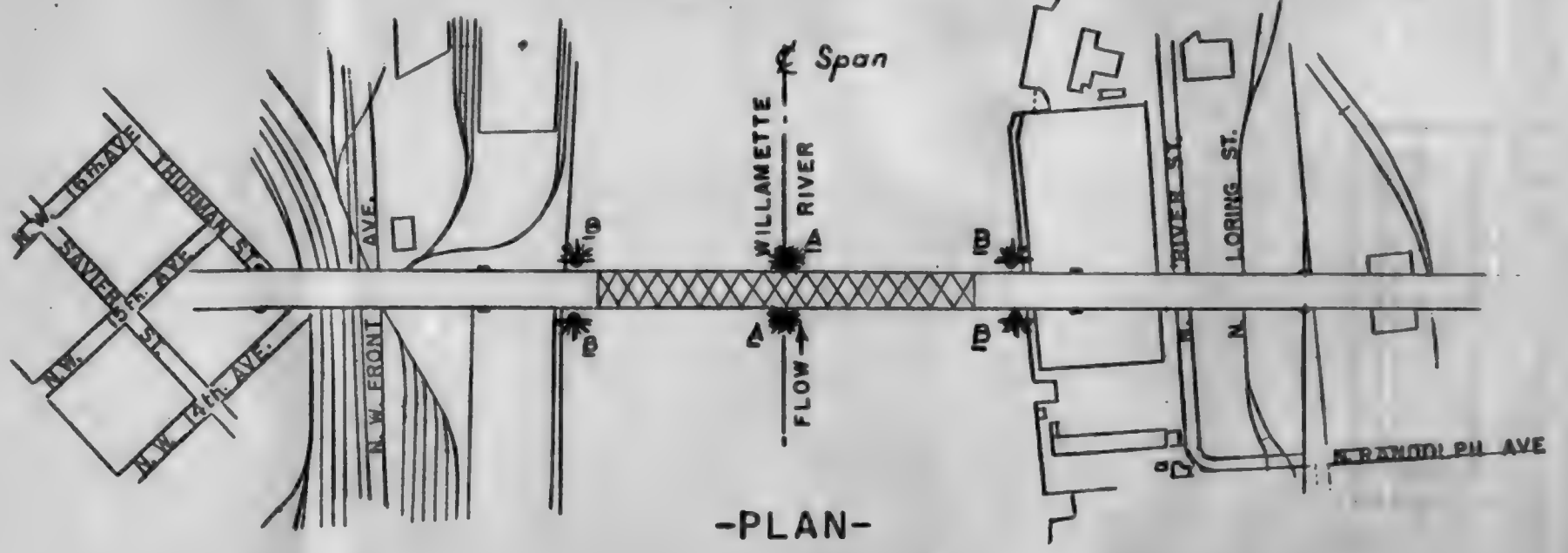
R. D. SCHMIDTMAN, RADM, USCG
Commander, 13th Coast Guard District

VICTOR KOLL, CDR, USCG
By direction

A ● Channel Center - 360° Green
B ◐ Channel Margin - 180° Red



-ELEVATION-



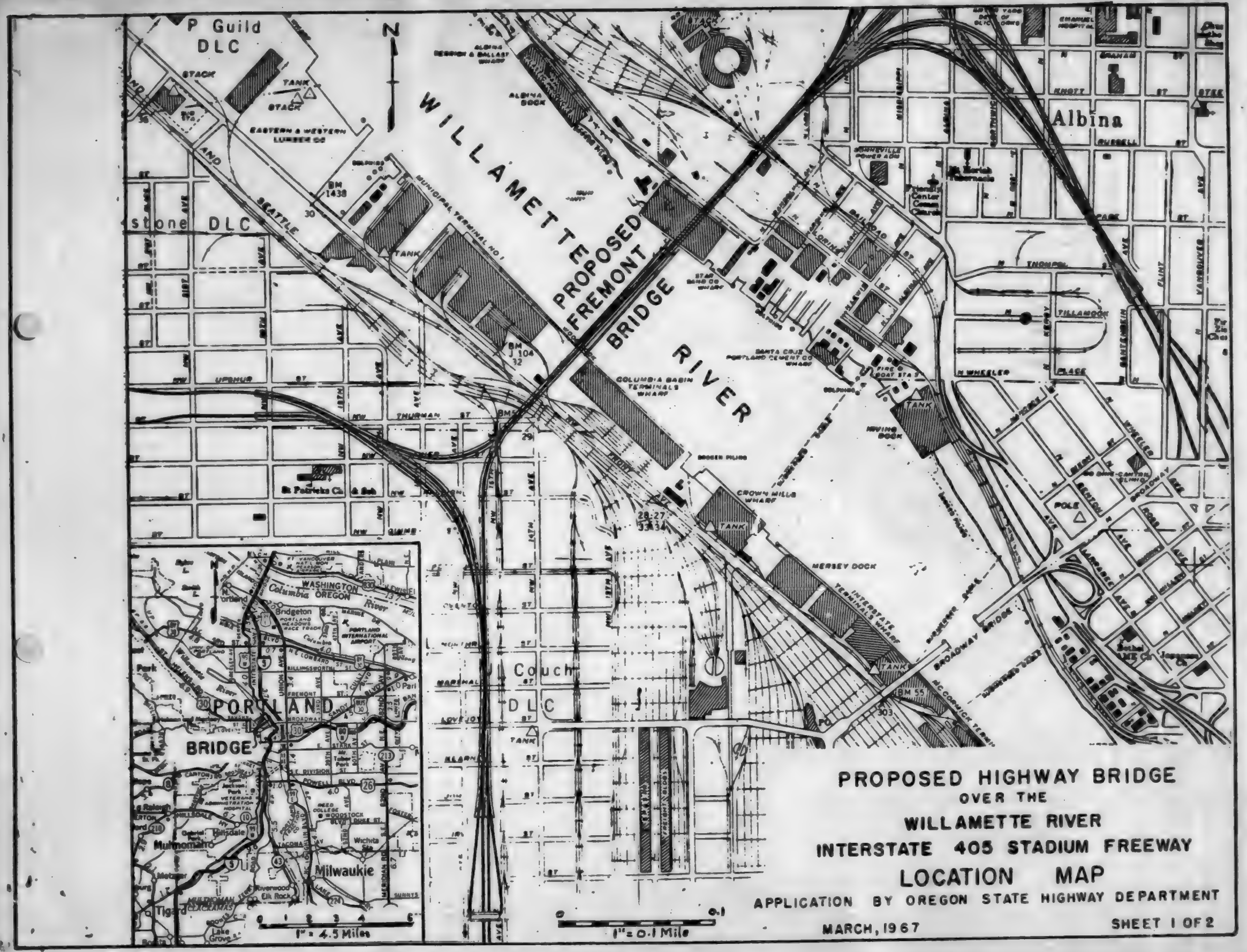
-PLAN-

SCALE: IN FEET
0 50 100 200 400

PREPARED BY
PARSONS, BRINCKERHOFF, QUADE & DOUGLAS INC.
ENGINEERS NEW YORK

PROPOSED HIGHWAY BRIDGE
OVER THE
WILLAMETTE RIVER
INTERSTATE 405 STADIUM FREEWAY.
PLAN & ELEVATION
APPLICATION BY OREGON STATE HIGHWAY DEPARTMENT

MARCH, 1967



PROPOSED HIGHWAY BRIDGE
OVER THE
WILLAMETTE RIVER
INTERSTATE 405 STADIUM FREEWAY
LOCATION MAP

APPLICATION BY OREGON STATE HIGHWAY DEPARTMENT

MARCH, 1967

SHEET 1 OF 2

RECEIVED
APR 5 • 1967
FOR FILING
I 405-8(17) 303
7276

April 4, 1967

Commander
13th Coast Guard District
618 Second Avenue
Seattle, Washington 98104

5511 Ap

Attention Victor Koll, Chief
Aids to Navigation Branch

Re: Fremont Bridge
Interstate 405
Bridge No. 2529
Navigation Lights

Dear Sir:

Early in 1968, the Oregon State Highway Department intends to award a contract for the construction of the Fremont Bridge on the Stadium Freeway, Interstate 405, across the Willamette River.

The Oregon State Highway Department hereby applies for approval of the proposed bridge lighting and, in accordance with paragraph 68.05-5 of CG-208, Aids to Navigation Regulations, prints in duplicate are submitted showing (a) a small scale vicinity map locating the bridge and indicating all other bridges within 1,000 feet above or below the proposed location, and (b) a plan and elevation of the bridge on which the proposed lighting is shown.

For your information, a revised War Department permit for the construction of the bridge indicated on Sheet 2 of two enclosed, has been requested of the District Engineer in Portland, Oregon.

Your prompt consideration of this application will be appreciated.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Marchant

IDM:mb ja

Enc.

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS
CONTINUING THE ENGINEERING PRACTICE
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY. NEW YORK. N. Y. 10006
TELEPHONE BEEKMAN 3-6300

MAURICE H. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. ZVERSON
ROBERT H. MEADE
SEYMOUR E. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. SICKEL
EUGENE L. MACDONALD

Mr. Ivan D. Marchant, Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

March 23, 1967

Re: Fremont Bridge - Navigation Lights

Dear Sir:

Enclosed please find a draft of a letter to the Coast Guard District Commander, plus supporting prints, concerning navigation lights to be mounted on the bridge. We would appreciate your sending this letter, on your own letterhead, together with two copies of each print, to the Coast Guard District Commander.

The enclosed material reflects our interpretation of the Coast Guard Regulations.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC

LGS:tak
enclosures
via airmail

Louis G. Silano
Project Engineer

cc: Mr. Tom Edwards - with enclosures

Received
BRIDGE DIVISION
AM MAR 27 1967 PM
7,8,9,10,11,12,1,2,3,4,5,6

RECEIVED
MAR 27 1967
OFFICE OF
STATE HIGHWAY ENGINEER

OREGON STATE HIGHWAY DEPARTMENT

Salem, Oregon 97310

Commander
13th Coast Guard District
Seattle, Washington

Dear Sir:

We intend, within the coming year, to award a contract for the construction of the Fremont Bridge carrying the Stadium Freeway over the Willamette River in Multnomah County.

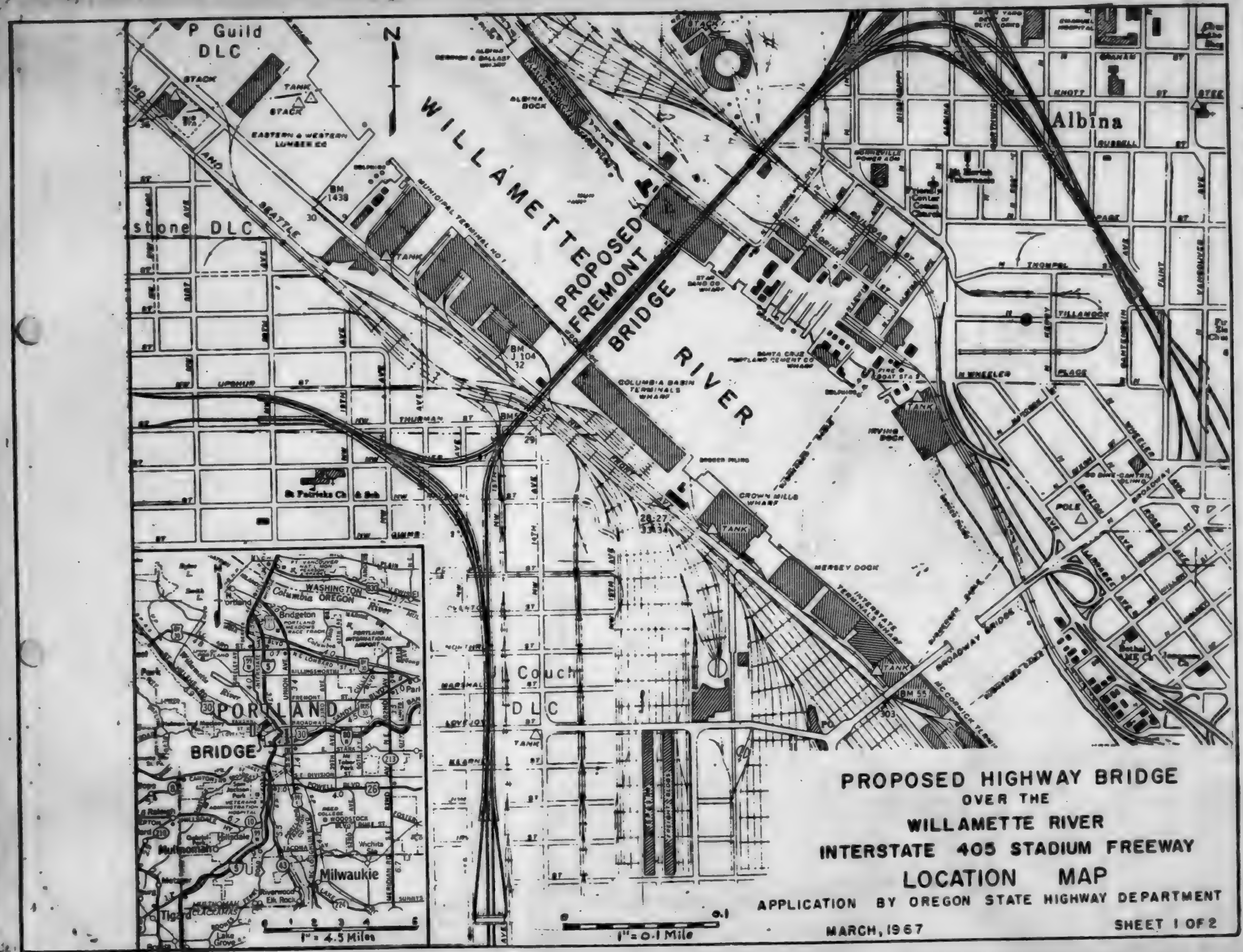
The State of Oregon State Highway Department is hereby applying for approval of the proposed bridge lighting, and in accordance with Paragraph 68.05-5 of CG-290, Aids to Navigation Regulations, prints in duplicate are herewith submitted showing (a) a small scale vicinity chart locating the bridge and indicating all other bridges within 1,000 feet above or below the proposed location, and (b) a plan and elevation of the bridge on which the proposed lighting is shown.

Your prompt consideration of this application would be appreciated.

Very truly yours,

OREGON STATE HIGHWAY DEPARTMENT

RECEIVED
HIGHWAY DEPT.
BRIDGE DIVISION
AM MAR 27 1967 PM
7,8,9,10,11,12,1,2,3,4,5,6



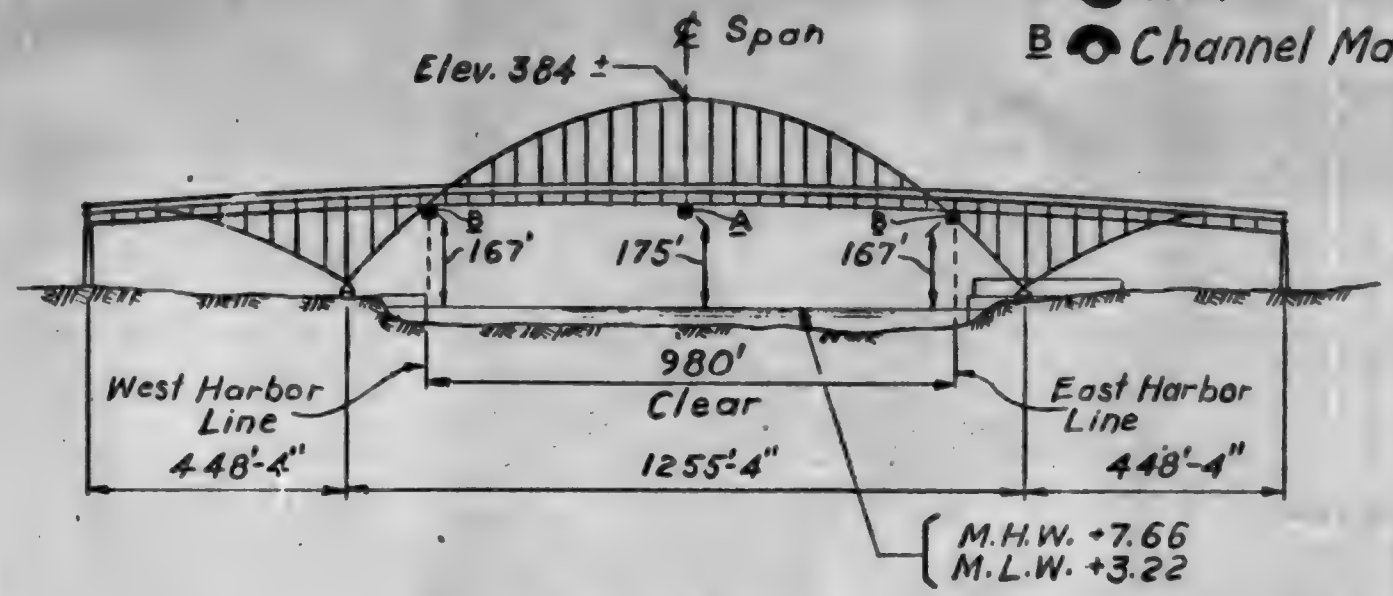
PROPOSED HIGHWAY BRIDGE
OVER THE
WILLAMETTE RIVER
INTERSTATE 405 STADIUM FREEWAY
LOCATION MAP

APPLICATION BY OREGON STATE HIGHWAY DEPARTMENT

MARCH, 1967

SHEET 1 OF 2

A ◎ Channel Center - 360° Green
B ◎ Channel Margin - 180° Red



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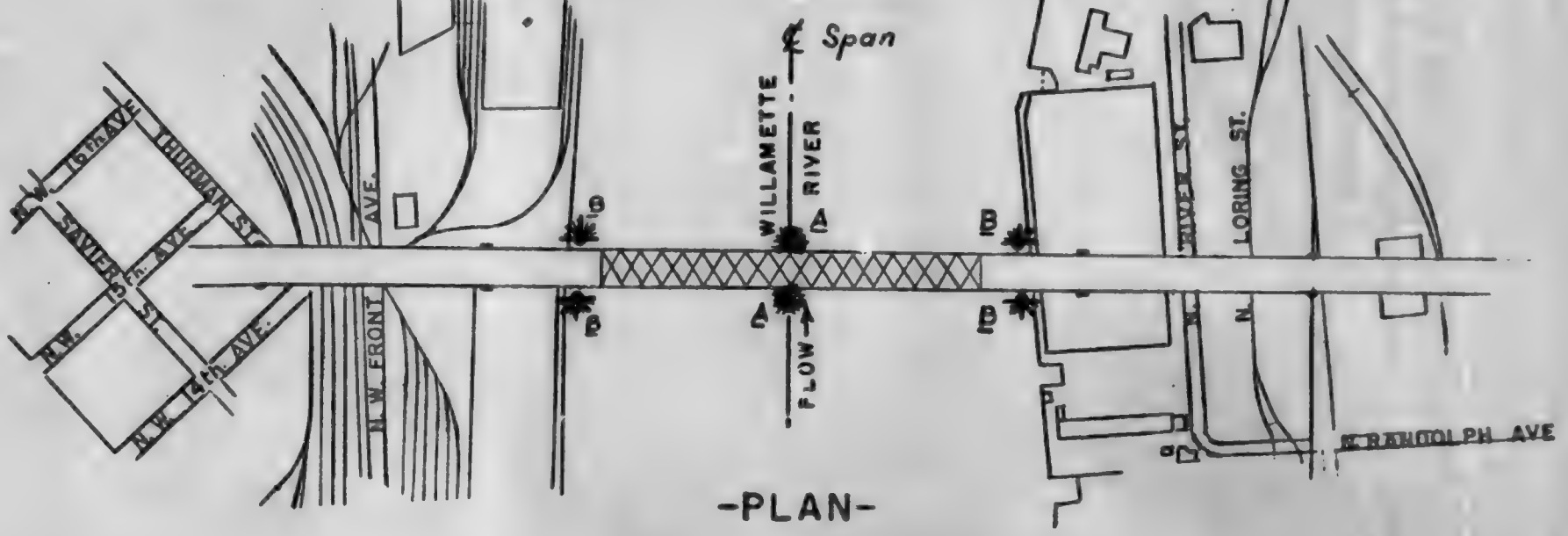

-PLAN-

SCALE: IN FEET
0 50 100 200 400

PREPARED BY
PARSONS, BRINCKERHOFF, QUADE & DOUGLAS INC.
ENGINEERS NEW YORK

PROPOSED HIGHWAY BRIDGE
OVER THE
WILLAMETTE RIVER
INTERSTATE 405 STADIUM FREEWAY.
PLAN & ELEVATION

APPLICATION BY OREGON STATE HIGHWAY DEPARTMENT
MARCH, 1967

FORM S-[illegible] REV 2-65

COMMISSIONERS
GLENN L. JACKSON, CHAIRMAN
MEDFORD
KENNETH H. [illegible]
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND

RECEIVED
AUG 22 1967
FOR FILING

I-405-8(17)303
7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

March 17, 1967

Parsons, Brinckerhoff, Quade & Douglas, Inc.
165 Broadway
New York City, New York 10006

Attention: Mr. Alfred Hadefine

Subject: Fremont Bridge
Proj. I-405-8(1)301
Br. No. 2529

Gentlemen:

The four additional sets of functional plans consisting of Dwgs. Nos. FD1 through FD5, inclusive, have been received; however, we still have not received the additional copies of the Dames & Moore foundation report requested at our meeting on March 8, 1967.

I am enclosing two copies of a Memorandum of Meeting which I prepared covering our meeting on March 8th. I am also enclosing two copies of a memorandum prepared by the Bureau of Public Roads covering the meeting.

-1046

Some of the material listed on page 2 of my memorandum is being sent under separate cover - the material being prints of the proposed outfall sewer on the west side of the river into which deck drainage can be carried. This contract is scheduled to be awarded on June 15th of this year. Two reduced-size prints each of Sheets 52, 53 and 52A are enclosed, indicating an outfall sewer previously constructed on the east side of the river which can be used for the discharge of deck drainage.

A discussion with the Portland fire marshal has been held and he desires dry standpipes similar to those placed on another structure in Portland. I am enclosing two prints of Dwg. No. 21243 indicating the general type of installation for Piers 1E and 1W. If possible, these pipes should be enclosed in the concrete pier shaft.

Items 3, 4 and 5 listed on page 2 of my memorandum are being studied now by our Traffic Department and the material will be sent you at the earliest possible time.

[illegible] NOTED
[illegible] NOTED
TOM EDWARDS

Two prints of a proposed railroad and street crossing relocation in the vicinity of Pier 2W are enclosed with four additional title sheets and two mylar films of the project title sheet being sent you under separate cover.

The functional plans are now being studied by this office as well as the Bureau of Public Roads and you will be notified of the results of this study in the near future; however, it may be well to mention some items at this time. One item causing concern in this office is the general shape of Piers 2E and 2W which will be adjacent to piers on the approaches. It is our belief that further study of the general shape is warranted to move the shafts away from the bridge centerline in order to eliminate the cantilever cap. Maximum compatibility between Piers 2E and 2W and the adjacent approach bents from an appearance standpoint should be achieved. I would suggest consultation with the approach consultant to the end that a pleasing result is obtained. 7124

It is our belief that further study of the foundation data at Pier 1E should be made in developing final details with particular reference given to permeability, which may or may not require a seal, and the difficulty of installing sheet piling in the very dense gravel formation. At Pier 1W, a further study of the proposed footing elevation of -20 should be made in view of the easily erodable material indicated by test borings and the proximity to the riverbed at the harbor line. A profile of the existing fill slope under the timber dock floor and riverward from the pier location will be obtained and furnished you as soon as possible.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

IDM:mb
Encls.
cc: Tom Edwards
Bureau of Public Roads
Att.: Roy Tokarud

RECEIVED
MAR 17 1967
OFFICE OF
STATE HIGHWAY ENGINEER

Mr. Edwards

RECEIVED
FEB 15 1967
FOR FILING

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS
CONTINUING THE ENGINEERING PRACTICE
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

I-405-8(17)303
7276

February 9, 1967

MAURICE M. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
HUGH P. ZIEMENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. SICKEL
EUGENE L. MACDONALD

Mr. Irving E. Olsen
Dames & Moore
1220 S. W. Morrison Street
Portland 5, Oregon

Re: Foundation Investigation
Fremont Bridge, Portland, Oregon

Dear Mr. Olsen:

In my letter to you of December 14, 1966, I made reference to the fact that we were awaiting your report and would appreciate receiving it as soon as possible.

Subsequent to this date, to be exact on January 13, 1967, you mailed to us copies of your preliminary report. This report did nothing more than give information on the actual foundation materials found and there was no foundation analysis included.

We realize that you are writing a final report, but time is of the essence, and we feel you could perhaps send us the basis of your analysis before it appears in the report. We are two months late now with our design and would like to proceed without any further delay. We would particularly like to know the recommended elevations of the pier footings, the allowable bearing capacity of the soil and the bearing capacity of the piles.

We are enclosing our check to the amount of $20,239.38 for payment for the subsurface work you have performed to date.

Very truly yours,

Alfred Hedefine

RECEIVED
FEB 10 1967
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
TOM EDWARDS

Alf...
enclosure
cc: Mr. I. D. Merchant, Mr. T. Edwards, Mr. G. M. Reynolds

MEMORANDUM

TO: FILES DATE: February 2, 1967

FROM: Louis G. Silano JOB NO. 2045-1020

SUBJECT: FREMONT BRIDGE - PORTLAND, OREGON

A design conference was held in the firm's library, on January 31st, 1967, with the following present:

Louis G. Silano	Valentin Saporoschenko
Professor Hans H. Bleich	John Swinglehurst

This meeting was called to clarify some of the design criteria established by Professor Bleich at the previous conference held on January 24th.

In regard to the arch rib where A.S.T.M. A514 steel will be used throughout, actual lengths of members are 45 feet to 65 feet and the $L/_r$ ratio based on these lengths will vary from 25 to 43. The allowable stress will be determined from the following formula:

$$Fa = 36{,}000 - 2.4(L/_r)^2, \text{ where } L = \text{Physical Length}$$

(This is equivalent to saying $Fa = 36{,}000 - 3(L/_r)^2$, where $L = 0.9 \times$ physical length). For local plate buckling, an effective $L/_r$ ratio will be determined and used in the above formula.

To check the unit stresses in the arch rib due to secondary moments, Professor Bleich recommended the following:

$$(F_{axial} + F_{bending}) - 3{,}000^{p.s.i.} = Fa$$

where Fa is determined from either (L_r) or $\left(\frac{L}{r}\right)_{crit} = 1.65\ b/t$, whichever is greater. This is a check on the local buckling capacity of the upper or lower plate, the arch member being checked either for overall buckling or local plate buckling, whichever controls. This procedure should also be applied to check the side plates for local plate buckling in the portions of the arch rib used as wind portals. It was also discussed that where access holes are required, the minimum plate thickness will be determined by the A.A.S.H.O. criteria for perforated plates, at least in the local area of the perforation.

For the design of the column members where the steel used will be ASTM A36 or A441, the allowable stress will be determined from the following A.A.S.H.O. formula's, assuming riveted ends:

Continued.....

MEMORANDUM

TO: FILES -2- DATE: February 2, 1967

FROM: Louis G. Stiano JOB NO. 2043-A020

SUBJECT: FREMONT BRIDGE - PORTLAND, OREGON

$$A36 \quad Fa = 16{,}000 - 0.3 \quad (L/r)^2$$

$$AA41 \quad Fa = 22{,}000 - 0.56 \quad (L/r)^2 \text{ for AA41 modified with thickness less than } 4"$$

Where L = vertical column length measured from geometric center line of girder to center-line of arch, and where -

$$\frac{k\,L}{r} \leq 130 \text{ for A-36}$$

$$\frac{k\,L}{r} \leq 125 \text{ for A-AA1}$$

These are limitations for the applicability of the formulae, if $\frac{k\,L}{r}$ is greater than the above limitations, see A.S.S.H.O. Appendix. The limiting length for compression members will be as specified in A.A.S.H.O. 1.6.9:

$\frac{L^1}{r} \leq 120$, where L^1 = vertical column length measured from bottom of girder flange to top of the arch rib.

The column section is assumed to be made up of two channel shaped sections joined by a 5/8 inch web plate. Professor Bleich recommended that for this particular column section, not less than 2/3 the area of the web may be neglected, in determining "r" to satisfy the A.A.S.H.O. requirement $L^1/r \leq$ 120. However, for purposes of allowable stress, the column should be checked both with the full web and with two-thirds of the web neglected.

In order to assure the shape of the column cross section, the use of horizontal transverse stiffeners was discussed and recommended to be used.

Professor Bleich outlined the design procedure as follows:

(a) Check column in axial compression only at center of the column. $P \max/A \leq Fa$

(b) Check column ends for axial load and moment:

$$f = \frac{P}{A} \pm \frac{Mc}{I} \leq F_{allowable}$$

Continued.....

MEMORANDUM

TO: FILES -3- DATE: February 2, 1967

FROM: Louis G. Stiano JOB NO. 2045-1020

SUBJECT: FREMONT BRIDGE - PORTLAND, OREGON

At the ends only, local plate buckling will govern; therefore, the thickness of the outstanding leg of the channel section should be ≤ 12.

For subsequent computer reruns, Professor Bleich recommended that the Moment of Inertia of the column be assumed as 75% of the actual where applicable, in order to account for reduced column stiffness, due to presence of axial load.

The box girder lower flange in the end spans where there is no arch rib was discussed. This portion of the girder is in pure bending and the bottom flange is highly compressed. Professor Bleich recommended, first, that web plates in this area be at least 3/8" thick, and secondly, that the flange be treated as an ordinary girder flange. Since the design has not been completed, this matter will be considered later.

In discussing the dead load, the following percentages for details were agreed upon:

Arch Rib - 20% including splice plates and diaphragms

Box Girder - 30% for transverse and longitudinal stiffeners and diaphragms, not including splices.

LGS:tak

Louis G. Stiano

cc: Ivan D. Hazelhurst
Tom Edwards
A. Rodefino

RECEIVED
FEB 6 1967
OFFICE OF
STATE HIGHWAY ENGINEER

FORM E-130X 50M 7-66

GLENN L. JACKSON, CHAIRMAN
MEDFORD
KENNETH O. HOLMES
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

RECEIVED
JAN 27 1967
FOR FILE

I-405-8(17)303
7276

January 24, 1967

Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York City, New York 10006

Attention: Mr. L. G. Silano

Subject: Fremont Bridge
Stadium Freeway
Multnomah County
Br. No. 2529

Gentlemen:

In reply to your letter of January 13, 1967, and in confirmation of our telephone conversation regarding the subject structure:

The use of the modified A441 steel has been approved by the Bureau of Public Roads as outlined in their circular memorandum of October 4, 1966, entitled "Use of Modified ASTM A441 Steel on Federal Aid Projects", a copy of which is enclosed. The use of this material and the unit stresses as mentioned in your letter will be allowed when engineering and economic considerations warrant.

We are unable to give you the information regarding the loads, shoes, reactions and other details of the approaches on the ends of the structure at this time. We are in the process of selecting a consultant for the design of the approaches and until this is completed, definite dimensions and bearings will not be available. However, we have assumed girder spacing and reasonable span lengths and have estimated the loadings with approximate girder depths. These are shown on the attached calculation sheet and sketch A87. These you may use for roughing out your pier design.

The selected consultant designing the approaches will confer with you as soon as practicable regarding these matters.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

RECEIVED
JAN 26 1967
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
TOM EDWARDS

TCR:mb
Encls.
cc: Tom Edwards

RECEIVED
FEB 1 - 1967
FOR FILING

E 405-8(11)303
7276

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS
CONTINUING THE ENGINEERING PRACTICE
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

MAURICE N. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM M. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

JANUARY 13, 1967

Mr. Ivan D. Marchant
Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Dear Mr. Merchant:

Currently there has been much interest by engineers in the use of the recently developed steel having properties similar to ASTM A441 but with modified chemical and physical properties. Other public agencies are accepting this steel on bridge projects when engineering and economic considerations warrant it. Some of these Agencies are: the Commonwealth of Massachusetts, Department of Public Works, New York State Department of Public Works, New Jersey Turnpike Authority and the Bureau of Public Roads.

Attached please find a copy, submitted to us by one of our clients, of a "Suggested Specification Modified A 441 Steel". We feel that the Fremont Bridge affords a good opportunity for the application of this steel not only because it permits the use of A 441 more economically but would also minimize the use of T-1 steel. Our work to date on the Fremont Bridge is not based upon using A 441 modified but we are at the stage where we must know very soon if we are to incorporate this material in our design, otherwise we would have to revise work already done. We would appreciate your early consideration of this material so that we will know how to proceed.

Please note that the unit stresses as specified in AASHO Standard Specifications for Highway Bridges for low-alloy steel 3/4 inch and under would under this specification apply to all thickness of the modified ASTM A 441 steel up to 4 inches.

As you probably know the United States Steel Corp. has been in production with this steel for several years now and Bethlehem Steel Corp. advises us that they expect to be in production before the construction of this project and therefore, we believe that in the tonnages required for the Fremont Bridge it would be readily available.

NOTED
JOM

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Mr. Ivan D. Marchant
Salem, Oregon 97310

We will very shortly be ready to plan and design the piers for this structure but before we can proceed with this work, we will need from you the information pertaining to the approach span superstructure. As you know our agreement requires us to detail the roadway joints ajoining our structure and we will need details of the approach spans effecting these dams. We will also need the depth of structure, loads, shoes, reactions and any other details which will affect the pier design.

With reference to our telephone conversation of January 9, 1967 we have contacted Dames and Moore and appraised them of the situation relative to the soils program. We have as of this date received no information from them but were advised that they will furnish us by January 16, 1967 all that they have in advance of the completion of their report.

Also enclosed please find a copy of minutes of a meeting held in our New York Office.

May I say it was a pleasure talking to you and I look forward to meeting you in Salem shortly.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

L. G. Silano
Project Engineer

LS:en
Enclosures
cc: Tom Edwards

MEMORANDUM

TO: FILE

DATE: January 13, 1967

FROM: Louis G. Silano

JOB NO. 2045-A020

SUBJECT: FREMONT BRIDGE - PORTLAND, OREGON

A design conference was held in M. E. Fiore's office on Tuesday, January 10, 1967, with the following present:

Michael E. Fiore — Valentin Sepcenko
Louis G. Silano — John Swinfieldhurst
Professor Hans. H. Bleich

The results of the first analysis of the bridge using the SEMSEC program were discussed. The output was deemed satisfactory for design purposes. It was decided to disconnect the Lower Level from direct participation with the Main Structure, in future analysis's. This decision was made after reviewing the column and Lower Level moments at the joints. Professor Bleich stated that elimination of the Lower Level will lighten column sections required and yield smaller bending moments at column joints.

Various alternates for framing the Lower Level were discussed, to avoid its participation with the Main System. In addition, two methods of transferring the Lower Level wind loads were reviewed:

1. Carrying the panel wind load in each column.

2. Carrying the entire wind load in the plane of the Lower Level.

No decision was made.

The column moments, stresses and sections were then examined. Professor Bleich was asked to discuss buckling and allowable stress considerations for these columns. He stated that the columns should be designed in accordance with AASHO formulation for axially loaded members with end moments, but that the axial stress should, in no case, exceed the AASHO allowable stress for axially loaded columns (assuming l=0.8L). He also stated that the column stiffness, for purposes of analysis, may be reduced, since they are axially compressed and fairly slender.

Continued.....

MEMORANDUM

TO: FILE

DATE: January 13, 1967

FROM: Lewis G. Silano

JOB NO: 2045-A020

SUBJECT: VANPORT BRIDGE - PORTLAND, OREGON

Professor Bleich recommended that design of the Arch Rib and Stiffening Girder proceed, based on the present analysis. The columns should be designed using the computed axial load with an end moment of 200 foot-kips ±. In design of the Arch Rib, axial loads should be considered primary, and end moments, secondary. The allowable stress would be taken as that specified for axially loaded columns with an additional allowance of 3 or 4 KSI for secondary bending stresses.

Professor Bleich requested copies of computations used to determine minimum thickness of plates for box-shaped compression members. He also requested data on T1 steel (ASTM A514).

Louis G. Silano

Louis G. Silano

LGS:tak

cc: Mr. Ivan D. Merchant - Oregon State Highway Department
Mr. Tom Edwards - Oregon State Highway Department ←
Mr. Alfred Hedefine

RECEIVED
JAN 18 1967
OFFICE OF
STATE HIGHWAY ENGINEER

I-405-8(17) PARSONS, BRINCKERHOFF, QUADE 1964
303 & DOUGLAS - Consultants
#7276 Fremont Bridge Folder #2

C+A 2657
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JAN 3 - 1967
FOR FILING

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PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
NEW YORK · SAN FRANCISCO

WILLIAM BARCLAY PARSONS 1865-1932
HENRY M. BRINCKERHOFF 1869-1945
MAURICE N. QUADE
WALTER G. DOUGLAS
ALFRED HEDEFINE
RUSH T. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N.Y. 10006
TELEPHONE BEEKMAN 3-6300

December 30, 1966

Mr. Ivan D. Merchant
Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge, Portland, Oregon

Dear Mr. Merchant:

We have, during the period since our last progress report to you, undertaken a test run for the analysis of the stiffened tied arch by the use of "STRESS".

Utilizing all of the assumptions contained in our design conference minutes of December 1, 1966, copies of which were sent to you on December 5, 1966, we computed the geometrics of the structure, member properties and all the necessary input forms for an attempt at a solution for a particular test loading condition.

On December 20, 1966, we received the results of our first test run. After revieving carefully the results of the test loading case, we were greatly pleased and encouraged by the results obtained. We, therefore, have proceeded with a more intensified program, and as of December 26, 1966, we have obtained the influence lines for live load. We will be actively engaged in evaluating the influence lines and resecticning members, in the coming days ahead.

We trust that this letter will keep you current with our program and fully appraised as to what has transpired since our last progress report to you.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

Louis G. Silano

L. G. Silano
Project Engineer

LGS:tak
via air mail

cc: Mr. Ron Edwards
Mr. Alfred A. Hedefine

NOTED
RON EDWARDS

RECEIVED
JAN 3 1967
OFFICE OF
STATE HIGHWAY ENGINEER

Mr. Edwards

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DEC 21 1966
FOR FILING

I-405-8(17)303
7276

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS
CONTINUING THE ENGINEERING PRACTICE
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-8300

December 14, 1966

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

MAURICE H. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

JP.

Mr. Irving E. Olsen
Dames & Moore
1220 S. W. Morrison Street
Portland 5, Oregon

Re: Foundation Investigation
Fremont Bridge
Portland, Oregon

Dear Mr. Olsen:

We have your letter of December 7, 1966 in which you submit certain information concerning the foundation investigation of the Fremont Bridge in the form of a Progress Report.

You have drawn our attention to the fact that it has taken more time to perform the actual drilling work than you had anticipated in your proposal to us as of August 30, 1966.

It is our understanding that you required 82 3/8 rig days as compared to your 50 days estimated in your proposal of August 30, 1966, but due to the fact that the drill rigs were located near each other, only 51 shift days of your own personnel have been necessary in order to supervise the work. The net result is an increase in cost of $4,839.38.

Based on your statement that the other items in your proposal will remain unchanged, we authorize the increased cost of $4,839.38.

We are awaiting your report and would appreciate it being made available as soon as possible.

NOTED
TOM EDWARDS

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
DEC 16 1966
AM 7,8,9,10,11,12,1,2,3,4,5,6 PM

Very truly yours,

Alfred Hedefine

Alfred Hedefine

AH/mr

cc: Messrs. I. D. Merchant and T Edwards

NOTED
IVAN D. MERCHANT

A. H.

EARTH SCIENCES

DAMES & MOORE
CONSULTANTS IN APPLIED EARTH SCIENCES
SOIL MECHANICS · ENGINEERING GEOLOGY · GEOPHYSICS

ATLANTA NEW YORK
CHICAGO PORTLAND
HONOLULU SALT LAKE CITY
HOUSTON SAN FRANCISCO
LOS ANGELES SEATTLE
WASHINGTON, D.C.
MADRID, SPAIN SAINT JOHN, N.B. CANADA
TEHRAN, IRAN

1220 S.W. MORRISON STREET · PORTLAND 5, OREGON · CAPITAL 6-7689
PARTNER: IRVING E. OLSEN

December 7, 1966

RECEIVED
DEC 9 - 1966

Parsons, Brinckerhoff, Quade and Douglas, Engineers
165 Broadway
New York, New York 10006

Attention: Mr. Alfred Hedefine

Gentlemen:

Progress Report
Foundation Investigation
Fremont Bridge
Portland, Oregon

The field explorations for the subject investigation were completed on December 5, 1966. As forewarned in our previous letter to you of November 16, 1966, the field progress has been considerably slower than the 50 days estimated in our proposal to you on August 30, 1966. Drilling in the gravel to the substantial depths required, has varied between 0.7 feet per hour to 2 feet per hour, with the average being about 1 1/4 feet per hour. Our records disclose that approximately 82 3/8 rig days (8-hours shift) were required to complete the work.

With the slower than anticipated rate, it generally has been feasible to locate the drill rigs near each other so that only 51 shift days by our personnel have been necessary to supervise, log, sample and obtain other necessary subsurface information. On the basis of the previously quoted rate of $290 per day for fully manned crew, and an adjusted rate of $145 per day for drill crew only, the following is our breakdown of cost for the field investigation.

51 rig days at $290	$14,790.00
31 3/8 rig days at $145	4,549.38
Total	$19,339.38

DAMES & MOORE

In our proposal, we estimated 50 days at $290 = $14,500. This amounts to a difference of $4,839.38. We would appreciate your extension of our authorization in this amount. The other items in our proposal remain unchanged.

Yours very truly,

DAMES & MOORE

Irving E. Olsen

IEO:mk

MEMORANDUM

TO: File

DATE: December 5, 1966

FROM: Louis G. Silano

JOB NO. 2045-A020

SUBJECT: Fremont Bridge - Portland, Oregon

A design conference was held on Thursday, December 1, 1966 in M. E. Fiore's office with the following present:

Michael E. Fiore	Valentin Sepcenko
Louis G. Silano	Ahmet Gursoy
Prof. Hans. H. Bleich	John Swindlehurst

The discussion was opened with a review of the bridge analysis to date. It was reported that a preliminary structure had been completed using data from the previous design reports and based on the following criteria:

1. Arch geometry set such that essentially no dead load moment is in girder, main span arch-girder intersection is at panel point and horizontal dead load reaction at main pier is zero.

2. An 15-foot depth of girder was assumed.

3. Use of Y1 steel in bottom flange of girder was limited to highly stressed area's of side span. Thickening of the lower portion of the web plates was again suggested as a means of reducing the thickness of the flange plates. Also, use of A441 modified (maximum thickness 4 inches, allowable stress 27,000 p.s.i.) was discussed.

Prof. Bleich reported that based on his dynamic analysis, the bridge would have a natural period of approximately 3 seconds. This was based on deflection data which was supplied to him from the previous design reports which assumed a 16-foot deep girder. This period represents a natural frequency in the range of a suspension bridge, and at this stage of development it would probably be more desirable to use 18' deep girders.

It was agreed that the arch and member sizes based on the preliminary design, the 18-foot girder and the newly established geometry be accepted and used to develope a "[illegible]" design analysis.

The following considerations applicable to the structure were discussed in order to adapt it to a rational analysis:

MEMORANDUM

TO: File

DATE: December 5, 1966

FROM: Louis G. Silano

JOB NO. 2043-A020

SUBJECT: Fremont Bridge - Portland, Oregon

A design conference was held on Thursday, December 1, 1966 in M. E. Fiore's office with the following present:

Michael E. Fiore	Valentin Sepcenko
Louis G. Silano	Ahmet Gursoy
Prof. Hans. H. Bleich	John Swindlehurst

The discussion was opened with a review of the bridge analysis to date. It was reported that a preliminary structure had been completed using data from the previous design reports and based on the following criteria:

1. Arch geometry set such that essentially no dead load moment is in girder, main span arch-girder intersection is at panel point and horizontal dead load reaction at main pier is zero.

2. An 18-foot depth of girder was assumed.

3. Use of T1 steel in bottom flange of girder was limited to highly stressed area's of side span. Thickening of the lower portion of the web plates was again suggested as a means of reducing the thickness of the flange plates. Also, use of A441 modified (maximum thickness 4 inches, allowable stress 27,000 p.s.i.) was discussed.

Prof. Bleich reported that based on his dynamic analysis, the bridge would have a natural period of approximately 3 seconds. This was based on deflection data which was supplied to him from the previous design reports which assumed a 16-foot deep girder. This period represents a natural frequency in the range of a suspension bridge, and at this stage of development it would probably be more desirable to use 18' deep girders.

It was agreed that the arch and member sizes based on the preliminary design, the 18-foot girder and the newly established geometry be accepted and used to develope a "REFINED" design analysis.

The following considerations applicable to the structure were discussed in order to adapt it to a rational analysis:

MEMORANDUM

TO: File

DATE: December 5, 1966

FROM: Louis G. Silano

JOB NO. 2045-A020

SUBJECT: Fremont Bridge - Portland, Oregon - Page Two

1. At the side span arch-girder intersection, a vertical rigid member should be assumed with section properties same as adjacent girder.

2. Column top segments within the girder section will be assumed to have an I of 10 times the actual column.

3. Similar assumption is to be made where arch intersects girder in main span.

4. Main span hangers should be assumed fixed at the girder with a small moment of inertia and pin connected at the arch rib. However, short hangers may require an assumed pin at both ends.

5. The lower deck longitudinal girder will participate with the structure and will produce secondary stresses in the columns. Axial stresses in lower deck girder are to be eliminated by assuming a sliding bearing at its intersection with arch rib.

The assumptions being used to design the orthotropic upper deck were reviewed. Prof. Bleich stated that the A.I.S.C. Design Manual though approximate was definitely adequate. He confirmed the assumptions used to determine the effective length of floor beam. The matter of increased allowable working stresses to be used for the superposition of main girder stresses and local bending stresses was presented. It was agreed that the permissible unit stress for the combined loading conditions be established at 112½ of normal unit stresses.

Based on the foregoing, all necessary data for input is being computed and compiled on input sheets and a first attempt at a solution by "Stress" will be undertaken during the week of December 14-18.

L. G. Silano
Project Engineer

LGS:tak

cc: AK

MEMORANDUM

TO: F I L E S

DATE: November 16, 1966

FROM: Louis G. Silano

JOB NO. 2045-A020

SUBJECT: FREMONT BRIDGE, PORTLAND, OREGON

A design conference was held on November 15, 1966 in M. E. Fiore's office with the following present:

Alfred Hedefine, Partner

Michael E. Fiore
George Vaccaro
Louis G. Silano

Prof. Hans H. Bleich
Valentin Sepcenko
Ahmet Bursoy
John Swindlehurst

The use of high strength quenched and tempered alloy structural steel, such as T1, was discussed. Its use in the arch rib was conceded, however, Professor Bleich strongly recommended against its use in the tie girder. Various methods of utilizing the low alloy steel in the lower flange of the tie girder were considered. Deepening the girder was also mentioned.

The residual moment in the tie girder to be assumed for the preliminary design dead load condition was directed by Professor Bleich to be as follows:

10,000 foot-kips in the area over the main pier, and
5,000 foot-kips elsewhere.

Professor Bleich also recommended that secondary stresses be approximated in the arch rib for preliminary design purposes. He illustrated a simple approximate method based on the ratio of effective depths of arch rib and girder and the bending moment stresses in the girder.

The question of the thickness of the tie girder web was raised. Mr. Hedefine directed that the thickness shall be one-half (1/2) inch.

The following criteria for a preliminary design of the structure were then discussed:

1. Tie girder to be proportioned with no T1 steel in main span.

2. Depths of girder of 16' and 18' are to be studied. (One-half inch web only to be considered.)

3. Assumed dead load moments are to be used.

4. Live load moments from previous studies are to be modified and used.

5. New dead load to be determined and structure adjusted as required.

The magnitude of the wind load was then discussed. Professor Bleich recommended against a model study. He believed an analytical approach would yield sufficiently precise results.

Professor Bleich requested data on the deflected shape of the structure based on previous calculations. These he had already received. He explained that they were needed for his dynamic analysis.

The floor framing and hanger supports for the lower level was then considered. It was concluded that the lower level should transmit the wind load in its own plane. Wire rope or wide flange shapes were discussed for use as the hanger. Two basic types of floor framing were presented:

1. Floor beams at panel points with simple composited stringers and an independent wind truss.

2. Multiple floor beams framed into longitudinal girders with continuous stringers. Longitudinal girder supported at panel points and serving the dual purpose as a wind chord.

The latter system was tentatively adopted with floor beams at half panel length spacing and stringers continuous for two panels. A preference for framing the stringers over the floor beams was expressed by Mr. Hedefine.

The structural analysis to be used was then discussed. Mr. Hedefine decided after hearing the various alternates that the MIT STRESS program should be utilized.

The upper deck orthotropic plate was also discussed. The criteria for use of either open or closed ribs for stiffening the deck plate were reviewed. Mr. Hedefine stated that Bethlehem Steel was encountering considerable difficulty in making the field welded connections required for the deck plate of the Poplar Street Bridge at St. Louis. Various alternate bolted deck splice connecting methods were discussed.

Louis G. Silano

JS/LGS/fgk

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NOV 14 1966
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I-405-8(17)303
7276

November 14, 1966

Mr. Louis G. Silano
Project Engineer
Parsons, Brinckerhoff,
Quade and Douglas
165 Broadway
New York, New York 10006

Re: Fremont Bridge
Bridge No. 2529

Your File: 2045-A020

Dear Mr. Silano:

This is to confirm the telephone call to my office on November 9 regarding the subject project.

It is our understanding that you desire to revise the span lengths to make the overall three-span series 2,152 feet rather than 2,140 feet as indicated on your preliminary design Drawing No. SIC. Revised span lengths are to be 448 feet 4 inches, 1,255 feet 4 inches and 448 feet 4 inches with the centerline station for Pier 2E at 346+24 and for Pier 2W at 367+76. The State has no objection to this minor revision and will assume that the limits of the project have been expanded by 12 feet and between the end stations as mentioned above.

The blank tracing cloth was delivered to the Salem post office on November 4 and presumably, left the post office for New York on the morning of November 5 by parcel post. The material should be in your office either on November 12 or November 14. Please advise if this material is not received by the November 14 date.

By letter of September 6, you were furnished six copies of our Drawing No. 22150 for use on this

project. Since that time, the State has studied this matter and believes that a revised type of handrail should be used. I am enclosing four prints of our Drawing No. 22431, which is our Type "G" rail, and should be used throughout. It will be necessary for your company to develop a steel rail conforming to the cross-section indicated for use on the orthotropic upper deck. I believe this matter was discussed at the last meeting in Salem. Minor revisions to the outside rail profile may be made as required to fit your details.

As indicated previously, the Bureau of Public Roads has approved a roadway width of 59 feet. This 59 feet would be the roadway width as indicated on Drawing No. 22431. This provides for four 12-foot traffic lanes, a 7-foot shoulder on the right of traffic and a 4-foot shoulder on the left of traffic. With the concrete dimensions shown on the enclosed handrail drawing, this will make the out-to-out of concrete 62 feet 6 inches.

With further reference to the roadway cross-section, the 7-foot shoulder on the right of traffic and the 4-foot shoulder on the left of traffic would make the crown point of the roadway one and one-half feet off the centerline of the bridge. It is believed that the bridge centerline should be used as the crown point for the transverse slope in order to keep the gutter elevations and the steel work symmetrical about the bridge centerline. Our standard transverse slope is .02-foot per foot on tangent sections.

Mr. Ivan D. Merchant, Bridge Engineer, has been designated as the contact between your company and the Highway Department and all future correspondence or questions should be sent to his attention.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

Attachments

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant

IDM:mb ja

WEARING SURFACE DETAIL
Scale: 1½"=1'-0"

SECTION "E-E"
Scale: 3/4"=1'-0"

END VIEW
Scale: 3/4"=1'-0"

SCORING
Scale: Full Size

PLAN
PARAPET JOINT DETAIL
Scale: 1"=1'-0"

Note: Tie of posts shall parallel grade & all vertical seaming shall be plumb.

PLAN
Scale: 3/4"=1'-0"

ELEVATION
Scale: 3/4"=1'-0"

SECTION "D-D"
Scale: 3/4"=1'-0"

DOUBLE POST
Scale: 3/4"=1'-0"

SECTION "A-A"

DETAIL OF CAST POST
Scale: 3"=1'-0"

LIGHT POST
Scale: 3/4"=1'-0"

SECTION "C-C"
Scale: 3/4"=1'-0"

ELEVATION

ALTERNATE ANCHOR BOLTS
Scale: 1½"=1'-0"

TYPICAL SECTION
Scale: 3/4"=1'-0"

SECTION "B-B"

GENERAL Notes
These details are intended for aluminum or steel rail alternates. Details shown are for aluminum tubing and set screws with cast aluminum rail posts, or for steel tubing and set screws with cast steel posts. Provide steel anchor bolts, nuts and washers, per detail. Railing shall be fabricated to the shape of the horizontal and vertical alignment of the structure. All steel members shall be hot dip galvanized after fabrication.

DIVISION STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

STANDARD
ONE PIPE PARAPET RAIL
TYPE "B"

DATE JULY 27, 1944
DRAWN MCY
DRAWING NO. 2243J

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS
CONTINUING THE ENGINEERING PRACTICE
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

November 11, 1966

MAURICE H. QUADE
WALTER S. DOUGLAS
ALFRED NEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

Mr. Ivan D. Merchant
Bridge Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Re: Fremont Bridge
Bridge No. 2529

Dear Mr. Merchant:

During Mr. Fiore's telephone conversation with Mr. Edwards on Wednesday, November 9, 1966 we were instructed to direct our correspondence to you concerning the Fremont Bridge, with copies to Mr. Edwards.

The main purpose of the telephone call was to discuss certain developments concerning the layout of the bridge. Our preliminary investigations indicated that the intersection of the arch and the tie girder should be at a panel point. As a result of this development we made a new layout of the bridge and determined that it would be desirable to increase the main span from 1,250 feet to 1,255 feet 4 inches, with corresponding increase in the side spans to 448 feet 4 inches. This change increased the total length of the bridge by about 12 feet. Mr. Edwards tentatively agreed that this would be satisfactory and we are sending you two (2) copies of our Sketch No. 1, showing the revised span lengths.

At the same time, we discussed the railing details which were sent us and Mr. Edwards concluded that we received the wrong type. He

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS ENGINEERS 1885

NOTED
JGM EDWARDS

Mr. Ivan D. Merchant
Bridge Engineer

November 11, 1966

stated he would send us a drawing of a two-rail railing which would be mounted on a curb.

Another item discussed was the cross slopes on the roadway. On the sketch showing the roadway cross section, the crown of roadway was indicated to be centered about the four 12 foot lanes. This would have located the crown of roadway 1 foot 6 inches offset with respect to the longitudinal centerline of the bridge. This is undesirable because the top of the tie girder on one side would be about 3/4" higher than on the other and this would have a considerable effect on the detailing and fabrication of the bridge. Mr. Edwards suggested, and we concurred, that it would be satisfactory to have the crown of roadway on the longitudinal centerline of bridge.

Another item discussed was the number of lanes of live load to be used in the design of the bridge. It was agreed that we would follow the ASHO specifications which require that a roadway of 57 feet be designed for five lanes.

We received Mr. Edwards letter of November 4, 1966 after we had our conversation with him. In this letter it was indicated that we should proceed with the design on the basis of using the 445 foot side spans as indicated in the report. We are assuming of course that our telephone conversation supersedes this letter.

As of this morning we have not yet received the pencil tracing film and standard sheets which were sent under separate cover on November 4th. If we do not receive this material within a few days, we will notify you.

Enclosed, are copies of the minutes of meetings held with Professor Bleich during the past three weeks.

If you have additional comments concerning these matters, please communicate with us immediately.

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
NOV 14 1966
AM 7,8,9,10,11,12,1,2,3,4,5,6 PM

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Louis G. Silano
Project Engineer

LGS/mr
enclosures
cc: Mr. Tom Edwards

F I L E

October 26, 1966

Louis G. Silano

2045-A020

FREMONT BRIDGE, PORTLAND OREGON

A design conference on the subject bridge was held on October 25, 1966 in the library with the following present:

Alfred Hedefine	Partner-in-Charge
Michael E. Fiore	Head, Division of Structures
George Vaccaro	Head, Bridge Section
Louis G. Silano	Project Engineer
Dr. Hans H. Bleich	Prof. of C.E., Columbia University
Valentin Sepcenko	Senior Engineer
John Swindlehurst	Senior Engineer

The purpose of the meeting was to acquaint Professor Bleich with the design criteria of the subject bridge. The structural analysis used for the preliminary design reports of July 1965 and April 1966 was outlined. The moment diagrams and influence lines derived for the April 1966 report were also discussed.

Specific areas of difficulty in the structural design analysis such as dea load stresses, camber, erection stresses, wind load stresses, and secondar, stresses were brought to Professor Bleich's attention. The scope of Professor Bleich's responsibility was generally discussed. Professor Bleich requested that he be given data on the dead load and a uniform load of 1 kip per foot moments, deflection and forces.

Louis G. Silano

JB/LGS/fgk

cc: M. E. Fiore

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BRIDGE DIVISION
NOV 14 1966
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MEMORANDUM

TO: F I L E

DATE: November 1, 1966

FROM: Louis G. Silano

JOB NO. 2045-A020

SUBJECT: FREMONT BRIDGE, PORTLAND, OREGON

The second design conference was held in M.E. Fiore's office on November 1, 1966 with the following present:

Michael E. Fiore	George Vaccaro
Louis G. Silano	John Swindlehurst
Valentin Sepcenko	Prof. Hans H. Bleich

The conference was opened with a discussion of the arch geometry for the proposed bridge. Certain comparisons were made between a parabolic curve and one based on a funicular polygon. Also the discussion centered on the relative accuracy of locating the working lines of the arch and stiffening girder. The intersection of the arch and girder working lines would be selected at a mid-panel point, if possible.

It was decided to locate the center line of the arch using coordinates. Professor Bleich requested that graphic studies be made of the shape of the arch based on the dead load analysis from the report of April, 1966. It was agreed that the shape of the arch must be set and held at the earliest possible date.

Professor Bleich received the information he requested at the previous conference. In addition, he was given a sketch showing the redundants selected for the previous structural analysis. He requested that part of the data he was given be re-plotted.

The next item discussed was the reasons for selecting fixed or expansion bearings at the main piers. Some of these are to distribute earthquate, wind and other longitudinal forces to the bearings and to reduce the expected lateral translation of the ends of the compression verticals. Professor Bleich pointed out the secondary effects in these verticals will be relieved by the rotation of the stiffening girder. Further studies of this condition are to be made based on the deformations determined from the preliminary analysis.

Professor Bleich postponed to a later date any discussion on erection methods or stresses.

Louis G. Silano

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
AM NOV 14 1966 PM
7,8,9,10,11,12,1,2,3,4,5,6

JS/LGS/fgk

cc: Alfred Hedefine
Portland, Oregon (2 copies)

MEMORANDUM

TO: File

DATE: November 10, 1966

FROM: L. G. Silano

JOB NO. XX Fremont Bridge
Portland, Oregon

SUBJECT:

Job No. 2045-A020

A design conference was held on November 8, 1966 in the office of M. E. Fiore with the following present:

Michael E. Fiore	Louis G. Silano
George Vaccaro	Valentin Sepcenko
Prof. Hans H. Bleich	John Swindlehurst

Professor Bleich proposed the following criteria for the design of the subject bridge:

1. Dead load axial stresses in the arch rib and tie girder will be determined assuming no dead load bending moment in the tie girder. Arch geometry will be adjusted to conform to this condition.
2. For design of the tie girder, D. L. moments due to irregularities in the location of the c.g. plus a small assumed moment will be used. A similar procedure will be used for other members.
3. The indeterminate structure will be analysed for live load influence lines.
4. Secondary stresses will be estimated for live load.
5. For analysis, the full moment of inertia will be used over the main pier and at the ends of the side span. The lack of full effectiveness of the girder section is to be ignored for this phase.
6. In the side span where the arch rib and girder come together, suitable assumptions as to moment of inertia and segment length are to be made.

These proposals were accepted.

Prof. Bleich further proposed determination of all D.L. cambering at this time. In addition he advised a separate analysis of the end section of the bridge structure, which would be a determinate configuration during erection. This matter was not considered pertinent to the present design problem and deferred to a later date.

A drawing showing the general arch girder geometry based on old D.L. data was shown to Prof. Bleich. The proposed arch outline would intersect the tie girder at mid panel and would have the D.L. horizontal component of the arch thrust equal in all spans. The latter criteria was generally accepted.

MEMORANDUM

TO: File

DATE: November 10, 1966

FROM: L. G. Silano

JOB NO. 2045-A020

SUBJECT:

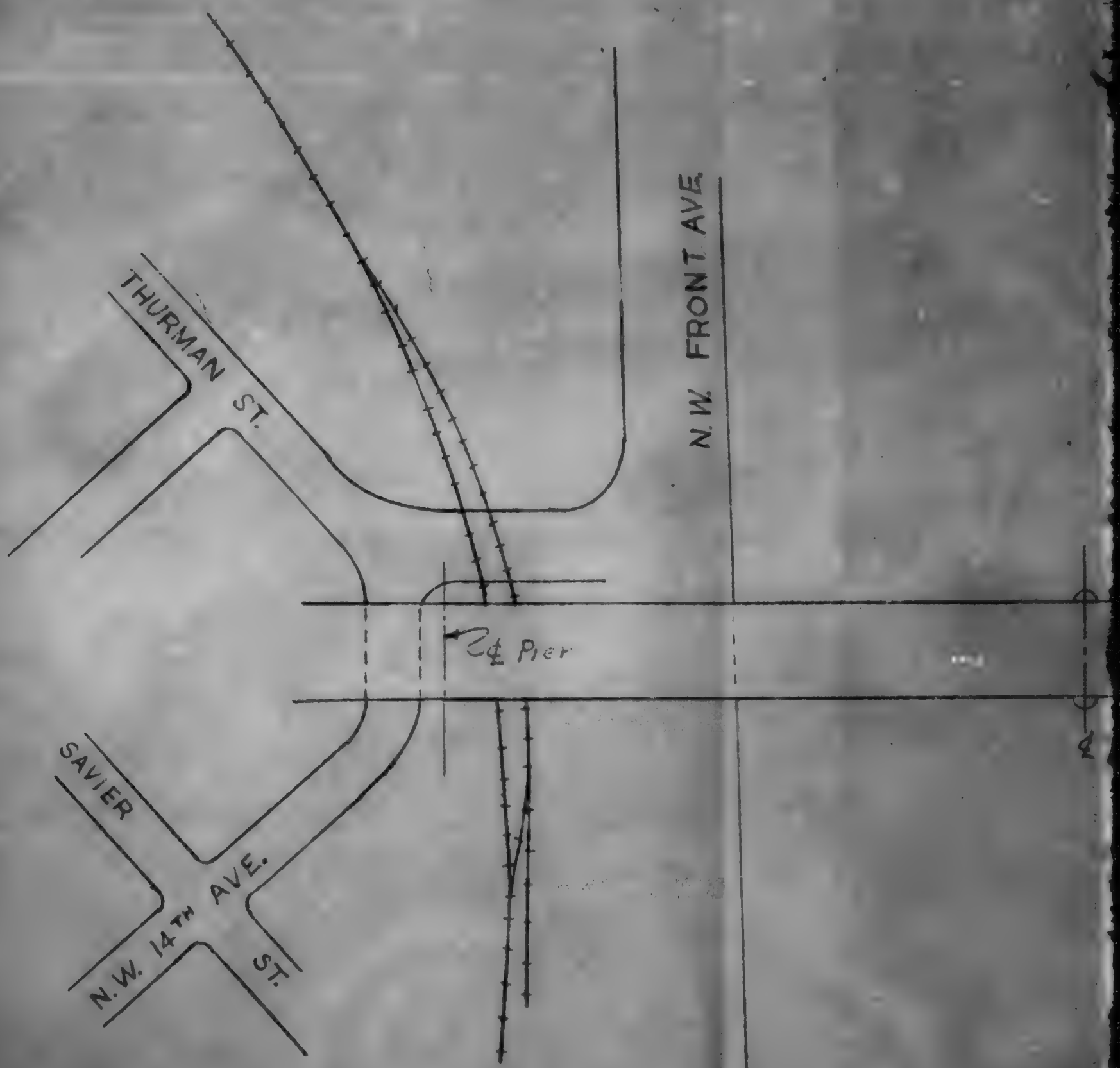
Again discussion centered on the location of the intersection of the arch rib and tie girder in the main span. It was decided that the inclined arch members would form their own wind portal frame at this intersection. Because of this and for reasons of appearance it was deemed adviseable to have the intersection occur at a panel point. Rough calculations indicated this could be done by increasing the total length of the bridge 12'-0", such that there would be a total of 48 panels at 44'-10". Moving Pier 2W 6'-0" west would also be in accord with railroad clearance requirements which previous correspondence with the Oregon had discussed.

After Prof. Bleich had left, there was further discussion on the structural analysis of the bridge. It was tentatively decided that we would investigate the use of STRESS for the computation of influence lines.

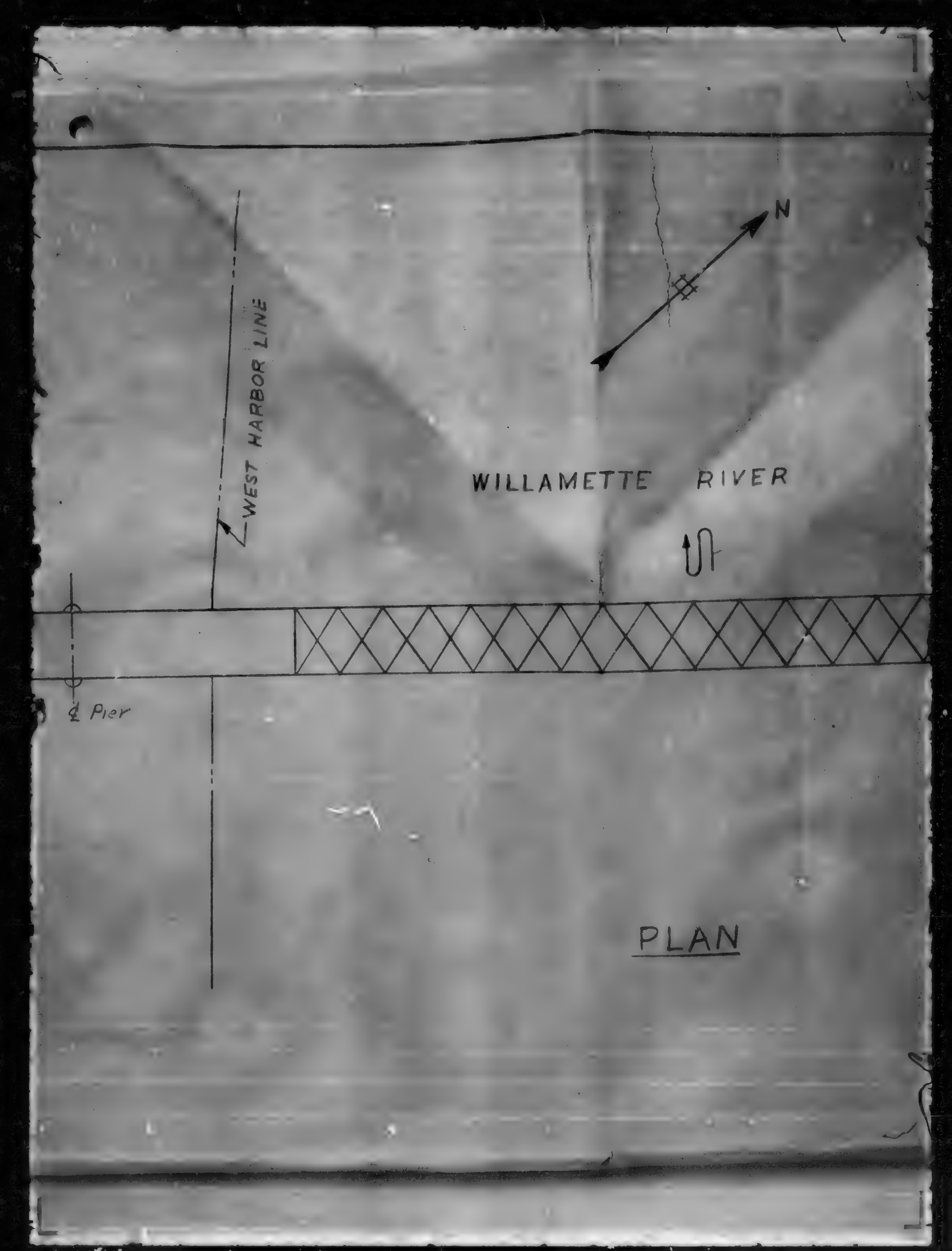
Louis G. Silano

Louis G. Silano

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
AM NOV 14 1966 PM
7,8,9,10,11,12,1,2,3,4,5,6



NOTE:
Only R.R. tracks adjacent to proposed pier locations are shown.

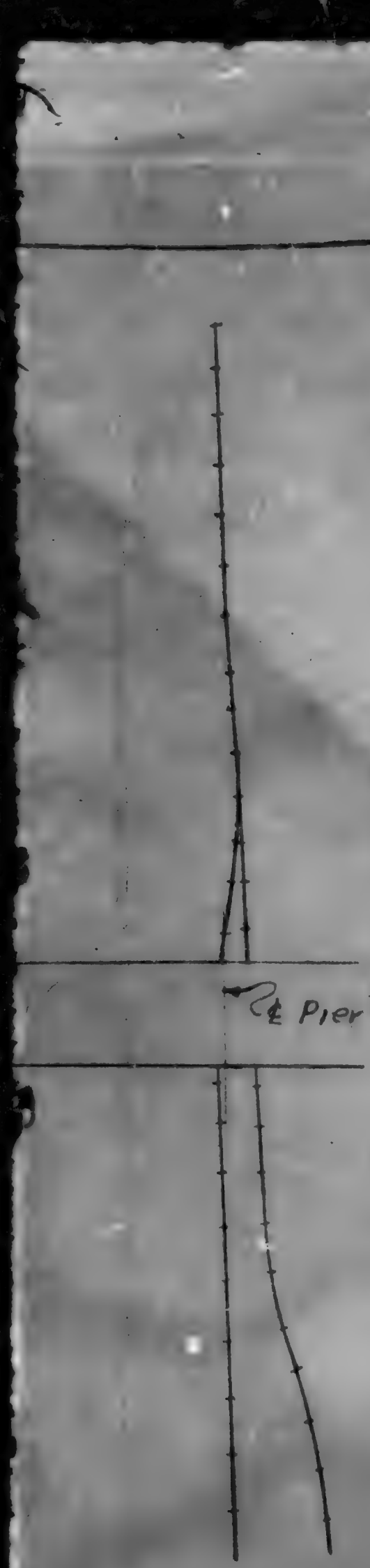


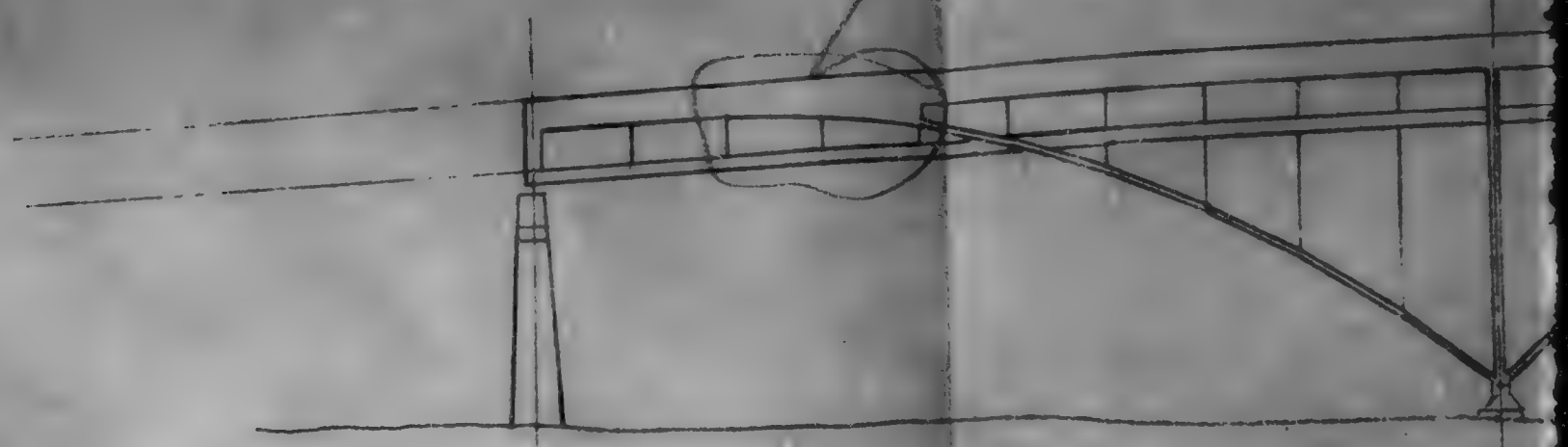
PLAN

EAST HARBOR LINE

℄ Pier

N. RIVER ST.


℄ Pier



PROPOSED REVISED SPAN LENGTHS

Limit of Bridge
Sta 367+76

448'-4"

2W

1W

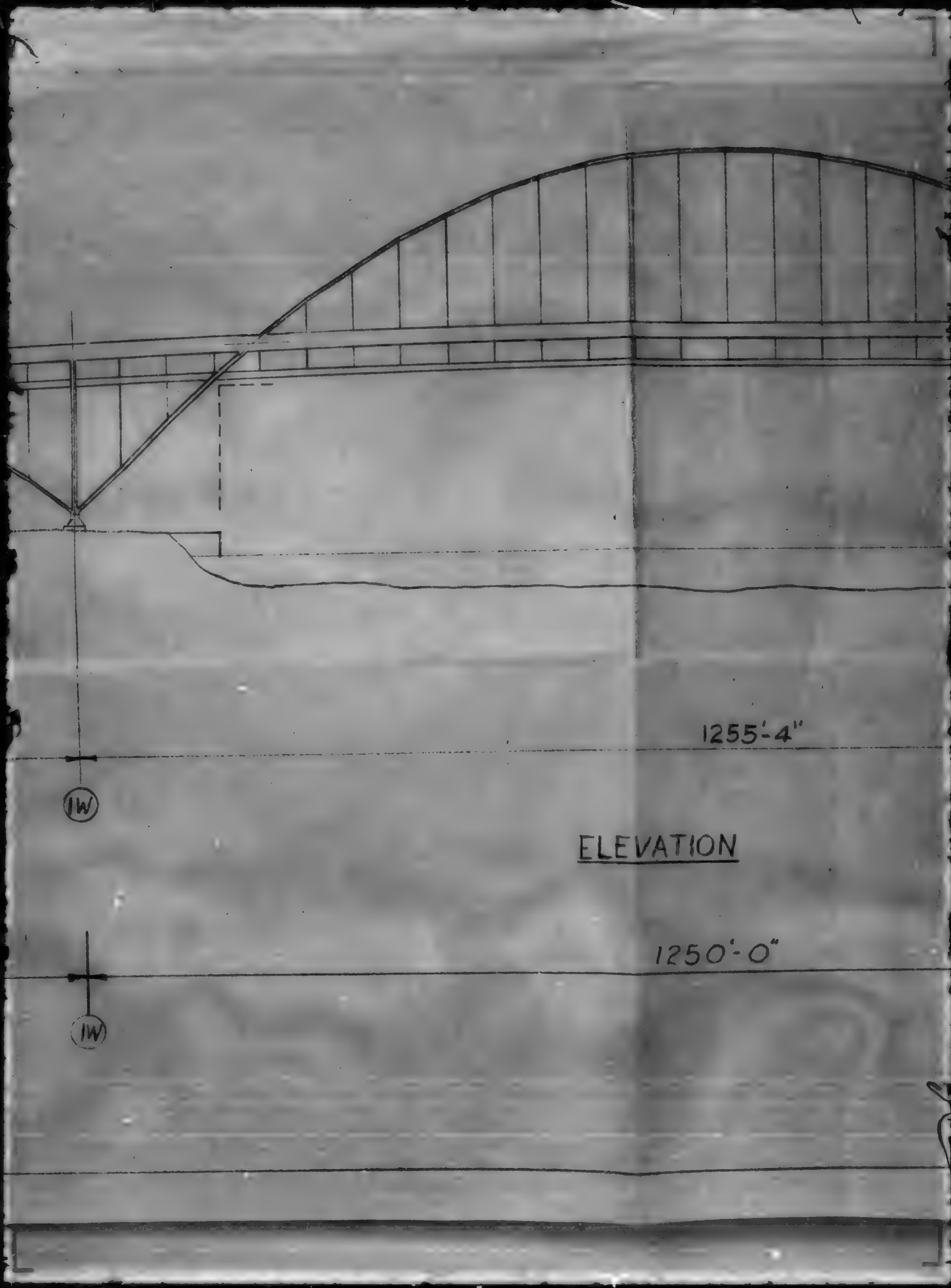
SPANS FROM REPORT OF APRIL, 1966

Limit of Bridge
Sta 367+70

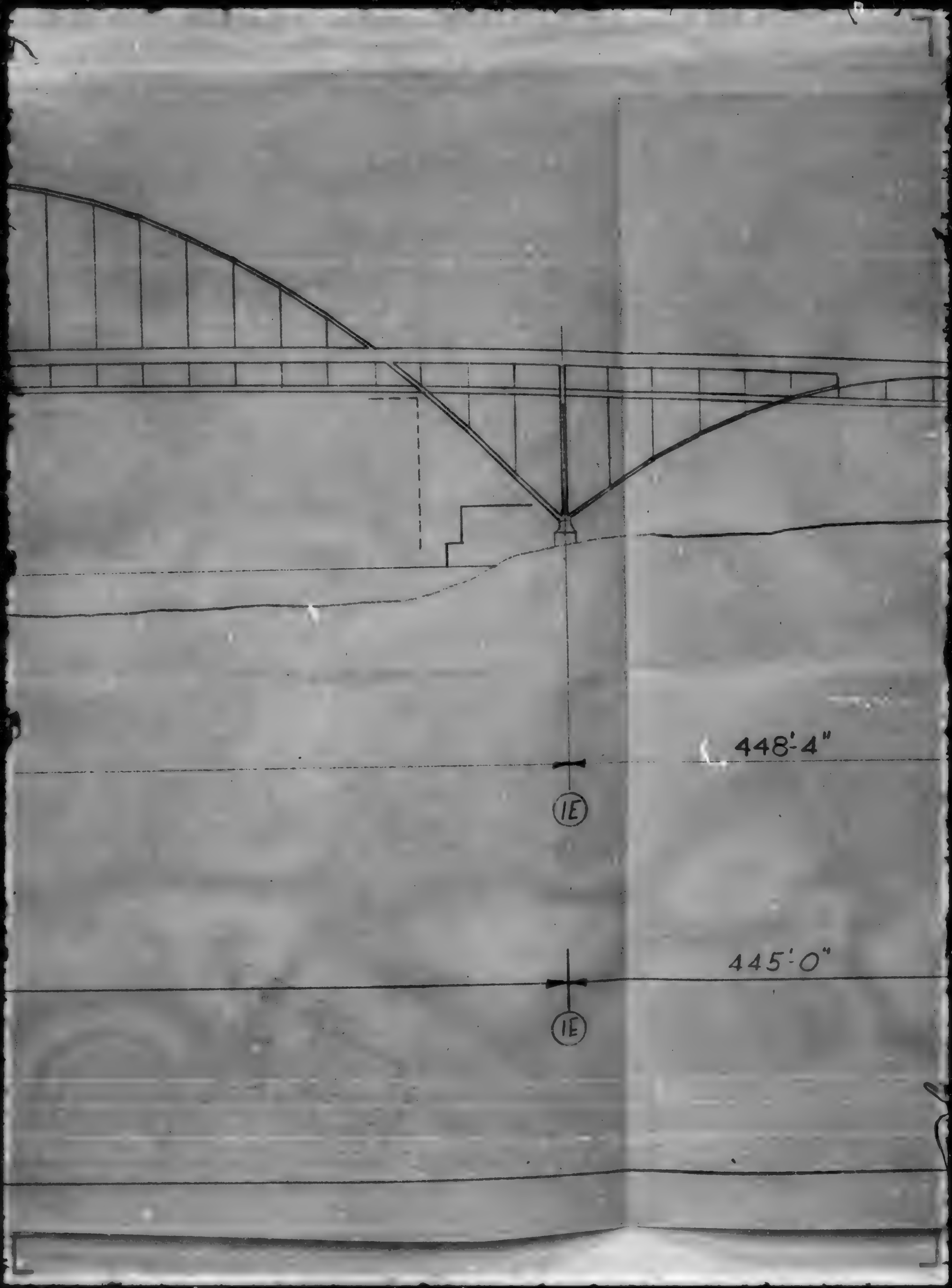
445'-0"

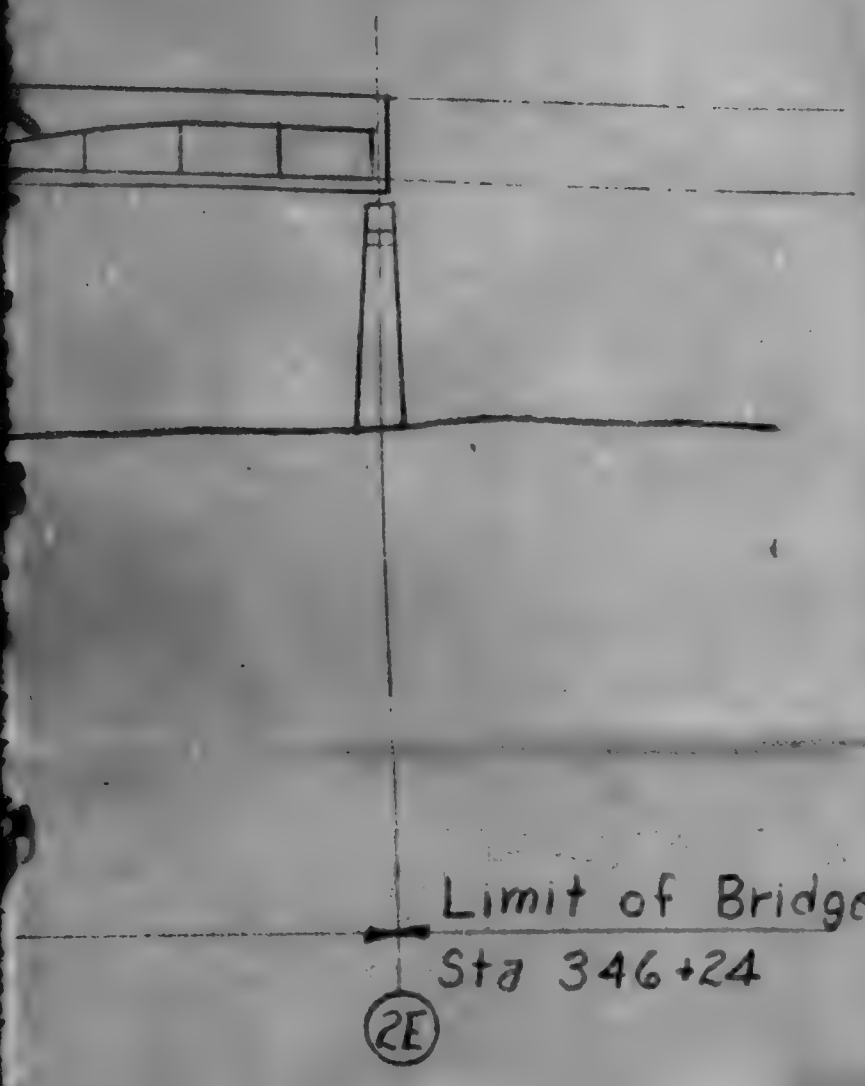
2W

1W



ELEVATION


448'-4"
1E
445'-0"
1E

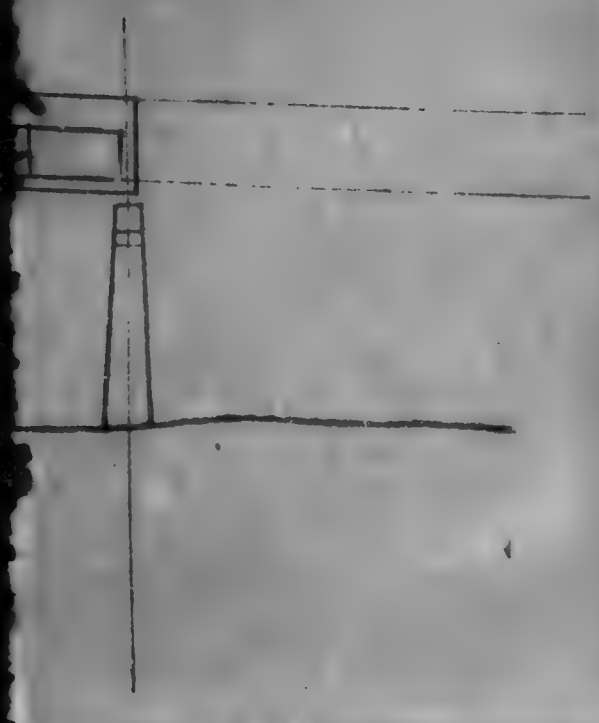


FREMONT BRIDGE
PORTLAND, OREGON

REVISED
SPAN LENGTHS

Parsons, Brinckerhoff, Quade, & Douglas, Inc.
Engineers
New York

Scale: 1" = 1
Date. Nov.
SK. # 1



Limit of Bridge
Sta 346+24
2E

Limit of Bridge
Sta 346+30
2E

FREMONT BRIDGE
PORTLAND, OREGON

REVISED
SPAN LENGTHS

Parsons, Brinckerhoff, Quade, & Douglas, Inc.
Engineers
New York

Scale: 1" = 100'
Date. Nov. 8, 1966
SK. # 1

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FOR FILING
I-405-8(17) 303
7276

November 4, 1966

Sp

5082

Parsons, Brinckerhoff, Quade
and Douglas, Inc.
165 Broadway
New York, New York 10006

Attention Mr. Louis G. Silano
Project Engineer

Re: Fremont Bridge
Bridge No. 2529

Your File: 2045-A020

Gentlemen:

Your progress letter of October 21 has been received and I will attempt to answer the questions asked in that letter.

Eighty sheets of detail and three sheets of our standard title sheets of pencil tracing film are being sent you under separate cover. If these do not arrive within a reasonable length of time, please advise.

No definite conclusions have been reached at this time on the relocation of the westerly passing track near Pier 2W at 14th and Thurman Streets. Present negotiations are to the effect that if this most westerly track is not removed in its entirety, it will be moved to within approximately 15 feet of the adjacent track on the east. This would move the track on the order of five feet and permit the construction of Pier 2W without undue construction problems. Your work should proceed on the basis of the 445-foot end spans as proposed in the engineering contract and with the limits of the contract remaining without change.

If at all possible, it is believed that Pier 1W should be designed so that it can be constructed without the removal of the existing retaining wall on the Commission of Public Dock property. We note that you think this is possible, but are reserving final decision until the additional foundation exploration has been completed with the report.

It is still believed that there would be no necessity for a meeting in Salem prior to the submission of your functional plan and the completion of the additional foundation report. If at any time you feel it would be to your advantage to meet with the Highway Department, please advise and a time will be set up for the meeting.

We will look forward to receiving your weekly progress reports.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

bc Forrest Cooper
R. L. Porter (enc.)
Victor D. Wolfe
Ivan Merchant

IDM:mb ja

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS
CONTINUING THE ENGINEERING PRACTICE
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

October 21, 1966

MAURICE H. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH P. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

2045-A020

State of Oregon
State Highway Department
Salem, Oregon 97310

Attention: Mr. Tom Edwards
Assistant State Highway Commissioner

Re: Fremont Bridge

Gentlemen:

We would like to take this opportunity to bring you up to date as to our activities on the Fremont Bridge. As you know, we have completed negotiations with Dames & Moore who are presently doing the foundation investigation for this bridge. This work commenced on October 10, 1966 and is expected to be completed on November 18. Dames & Moore estimated that the report of the investigations and laboratory testing analysis would be submitted on or before December 16, 1966.

On October 10, 1966 we met with Dr. Hans H. Bleich, Director of the Institute of Air Flight Structures and a Professor at Columbia University, for the purpose of making an agreement for him to be our consultant on the analysis of the bridge. We had our first technical meeting with Dr. Bleich on October 18 and will meet with him at regular intervals during the analysis and design phase. We are presently doing some preliminary investigation work for Dr. Bleich preparatory to making a decision as to the method to be used for analyzing the structure.

The last paragraph of your letter of October 13 mentions that the contract requires the submission of "foundational plans" within two months after receipt of written notice to proceed. We are sure you meant to say "functional plans",

Merchant
E R & B

which we consider to be the preliminary layout showing the confirmation of the structure with all clearances and geometric criteria for the roadway, etc. We anticipate that this drawing or drawings should be ready about that time.

In his letter of September 16, 1966, Mr. Ivan D. Merchant stated that there was a possibility of removing the track which interferes with the report location of Pier 2W at the 14th Street grade crossing. Preliminary investigation indicates that by moving Pier 2W five feet to the west, thus increasing the side span from 445 feet to 450 feet, it would be possible to construct the pier footing and provide 8'6" minimum clearance from the centerline of the track to the sheeting. In order to maintain the symmetry of the structure, it will also be necessary to move Pier 2E (Loring Street) five feet to the east. Moving Pier 2E, as stated, would require track relocation work in addition to that anticipated for the original location of Pier 2E.

We would appreciate having your concurrence on the relocation of Piers 2E and 2W before we become involved in any computations for the bridge.

Preliminary investigation indicates that we may just barely be able to construct Pier 1W without disturbing the existing retaining wall structure for the Municipal Terminal #1 Yard. We would like to reserve final decision on this matter until we receive the report and recommendations of the soils consultant, Dames & Moore.

The contract agreement calls for the State to furnish pencil tracing film stock in such quantities as is necessary for preparation of the contract plans. We estimate that 80 sheets would be required to complete the work.

80 — 3-Title

We expect to send you a progress report weekly from now on. We are in the process of preparing and will send you shortly our schedule for performing the various parts of the work. The early stages of progress of necessity will be very slow because of the analysis which will involve very few men but will take a long time because of the many complications involved in designing the structure.

We trust that the foregoing brings you up to date on our activities, and as stated in an earlier letter, we are ready to meet with you in Salem at any time to discuss the job.

PARSONS. BRINCKERHOFF. QUADE DOUGLAS , Inc.

Mr. Tom Edwards -3- October 21, 1966

We have designated Mr. Louis G. Silano to be the Project Engineer for this work. He will be completely knowledgeable about all phases of the production of this job. All material pertaining to the work should be referred to Mr. Silano. Mr. Fiore is Head of the Division of Structures. He is Mr. Silano's immediate superior. Mr. Fiore may be contacted in my absence on matters which should be brought to my attention.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Alfred Hedefine

Alfred Hedefine

MHF/fgk

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
AM OCT 25 1966 PM
7,8,9,10,11,12,1,2,3,4,5,6

RECEIVED
OCT 24 1966
OFFICE OF
STATE HIGHWAY ENGINEER

FILED
OCT 13 1966
FOR FILING

I-405-8(17)303
7276

October 13, 1966

Mr. Alfred Hedefine
Parsons, Brinckerhoff, Quade
and Douglas, Inc.
165 Broadway
New York, New York 10006

5024

Dear Mr. Hedefine:

Your recent letter acknowledging a copy of the fully executed contract for design services on the Fremont Bridge requests an expression from the State regarding an early meeting in Salem on this project.

It would appear that a visit at this time would be premature. As soon as the foundation exploration work has been completed and analyzed by your foundation consultant and you have a tentative design, it would seem that a meeting would be in order.

It is also noted that the contract requires the submission of 'foundational plans' within two months after receipt of written notice to proceed. The State is assuming that the written notice to proceed was on September 23, 1966 when you received the fully executed copy of the contract.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant

IDE:mb/TE:ja

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS
CONTINUING THE ENGINEERING PRACTICE
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

4278

SEP 29 66

September 28, 1966

MAURICE N. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

REFERRED TO Edwards BY DEPUTY STATE HIGHWAY ENGINEER Please handle

Mr. Forrest Cooper
State Highway Engineer
State Highway Department
Salem, Oregon 97310

Re: Fremont Bridge

Attention: Mr. R. L. Porter,
Deputy State Highway Engineer

Gentlemen:

As of September 23, 1966 we received a copy of the fully executed contract for the design services of our firm for the Fremont Bridge on Interstate 405 in Portland, Oregon.

Merchant file

We are very pleased indeed to receive this assignment from the Department and in accordance with our contract will process the work quickly.

We would like an expression from you as to whether you would advise our coming out to your offices to talk over and arrange the necessary procedures and other matters that you want us to adhere to during this phase of the work.

Very truly yours,

Alfred Hedefine

Alfred Hedefine

RECEIVED
OREGON STATE HIGHWAY DEPT.
BRIDGE DIVISION
AM OCT 3 - 1966 PM
7,8,9,10,11,12,1,2,3,4,5,6

RECEIVED
SEP 29 1966
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
IVAN D. MERCHANT

RECEIVED
SEP 29 1966
OREGON
STATE HIGHWAY COMMISSION

AH/mr

RECEIVED
NOV 22 1966
FOR FILING

October 3, 1966

4 U

Mr. Freeman Holmer, Director
Department of Finance and Administration
109 State Capitol Building
Salem, Oregon 97310

MISC. CONTRACTS and
AGREEMENTS No. 3169

Dear Mr. Holmer:

Attached for your approval are two copies of an agreement with Parsons, Brinckerhoff, Quade and Douglas for the preparation of plans and specifications for the Fremont Bridge on Interstate Route 405 in Portland.

The selection of this firm was made after several months of study by the Commission and the Bureau of Public Roads, and the agreement has been approved by the Bureau of Public Roads.

Attached is a copy of a letter to the Commission by Mr. R. L. Porter, Deputy State Highway Engineer, giving a brief explanation of the agreement.

If you approve the agreement, please return the copy marked Original; the other copy is for your records.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

FQ:fm
Atts.

cc R. L. Porter
Tom Edwards

FORM S-[illegible] 5M, 4-62

COMMISSIONERS
GLENN L. JACKSON, CHAIRMAN
MEDFORD
KENNETH N. FRIDLEY, MEMBER
WASCO
DAVID B. SIMPSON, MEMBER
PORTLAND

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

AGENDA
OCT 6 1966
4 a

September 21, 1966

Oregon State Highway Commission

Plan — PBQ&D Copy sent to them 9-21 by Mail S. This is our copy. FL

Gentlemen:

An agreement has been consummated with the firm of Parsons, Brinckerhoff, Quade & Douglas to prepare contract plans and specifications for the Fremont Bridge on Interstate Route 405 in Portland

The agreement is on the basis of a lump sum fee in the amount of $585,000, with provisions for extra work if it should be needed on a per diem basis. The contract is limited to an expenditure of $650,000, which cannot be exceeded except by a formal supplement.

The Bureau of Public Roads has approved the agreement, and Chairman Jackson, Commissioner Simpson, and Commissioner Fridley gave verbal approval on September 16, 19, and 21, respectively. The matter will be on the agenda for the October 6 meeting for your formal concurrence.

Very truly yours,

Forrest Cooper
State Highway Engineer

By R. L. Porter

R. L. Porter
Deputy State Highway Engineer

RLPtms
cc Floyd Query
Tom Edwards
Victor D. Wolfe
I. D. Merchant
C. H. Maison

NOTED
FLOYD QUERY

RECEIVED
SEP 22 1966

SP*23401-734

E-405-8(17)303
7276

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
September 21, 1966

SUBJECT:

To: MEMO TO FILE

Sp.

L

On this date, Commissioner Fridley verbally approved the agreement with Parsons, Brinckerhoff, Quade and Douglas for the detailed design and preparation of specifications for the Fremont Bridge on Interstate 405 in Portland.

Chairman Jackson and Commissioner Simpson gave verbal approval on September 16 and 19, respectively, and the matter will be on the agenda for the October meeting for formal concurrence.

R. L. Porter
Deputy State Highway Engineer

RLP:ms
cc Forrest Cooper
Tom Edwards
Victor D. Wolfe
I. D. Merchant

FORM CD-121 (9-22-59)
(FHWA: BY A.O. 306-10)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

TO : Mr. Forrest Cooper
State Highway Engineer
Salem, Oregon

DATE: September 15, 1966

08-35-EC

FROM : A. W. Parsons
Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(1)301 - Fremont Bridge
Parsons, Brinckerhoff, Quade and Douglas, Inc. - Consultant Agreement

Mr. Edward's September 9 letter submitted a preliminary draft of the subject agreement for the preparation of the P.S. & E. for the Fremont Bridge. Subsequently, we received informally several corrections on September 12.

The firm of Parsons, Brinckerhoff, Quade and Douglas, Inc., of 165 Broadway, New York, New York, appears to satisfy the requirements of PPM 40-6, Paragraph 3d, as to professional qualifications and availability of experienced personnel.

We hereby approve this corrected draft of the consultant agreement and authorize you to proceed with the work limited to the specified lump sum of $585,000 effective this date.

We would appreciate receiving three copies of the executed agreement for our files.

NOTED
R. L. PORTER

Copy Edwards
" Merchant
9-22-66

RECEIVED
SEP
OFFICE
STATE HIGHWAY ENGINEER

RECEIVED
SEP 12 1966
FOR FILING
I-405-8(17)303
7276

September 9, 1966

Mr. A. W. Parsons
Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon

Dear Sir:

Attached hereto are data concerning the contract which this Department proposes to execute with the firm of Parsons, Brinckerhoff, Quade and Douglas to cover the consulting services necessary for the design of the Fremont Bridge. In proceeding with negotiation of this consultant service, you have been previously advised as to the Department's method of selection of consultants and you have been previously supplied with a copy of the standard consultant contract which our engineering and legal departments have prepared for use for these services.

The design of this structure is, as you well know, an extremely difficult undertaking. The structure is of outstanding symmetry and encompasses the orthotropic principle, which is in its infancy as concerns application to bridge problems in the United States. We are fortunate in having secured such an outstanding firm as Parsons, Brinckerhoff, Quade and Douglas to undertake this work.

In analyzing the costs to be used as a basis for comparison, this Department (as you have been previously notified) studied our design costs per $1,000 value of completed structure design in the following manner:

First, we are fortunate in that we have a time-card system which definitely establishes the man hours necessary to complete each design. A study of the cards over a five-year period was undertaken. The entire design workload over that five-year period was subdivided into

types of structure and further subdivided into the size of structure and the man hours required for each job plotted. From these an average curve was drawn by which we can determine with consistent accuracy the amount of man hours which will be required for any size and type of structure. This was the basis of preparation of our analysis of the design costs for the Fremont Bridge.

Our total cost, which is detailed in the data attached, was $614,000+ which is $29,000 (or 5 percent) over the lump sum price of $585,000 submitted by Parsons, Brinckerhoff, Quade and Douglas. There are some items in the Parsons, Brinckerhoff, Quade and Douglas breakdown of costs concerning which comment is appropriate.

First, they have given us a complete breakdown of the man days required in the design. As explained to you in our conference, the application of rates to the various grades of engineering talent at a very low scale is necessary to check the total of $163,000 quoted in the Parsons, Brinckerhoff, Quade and Douglas analysis. Their analysis includes a 6 percent escalation figure to cover the continuing rise in cost of engineering talent and we have no question concerning this 6 percent.

Also included is a 10 percent contingent fee. This is no doubt justified for two reasons. First, the rates at which the base figure was achieved are quite low and second, in a lump sum design for a statically indeterminate structure of a new design I am sure that there will be problems which will require unforeseen design details.

Parsons, Brinckerhoff, Quade and Douglas' letter of September 6 gives a complete breakdown of their overhead expenses. They total approximately 96 percent, whereas the figure used in enlarging their direct labor costs is 100 percent. We are inclined to agree with Mr. Medefind's statement that the increase in F.I.C.A., Social Security and vacation leaves, which are inevitable, will more than eat up the unrecorded 4 percent.

The last item meriting comment is the profit figure of $100,000. The base detailed costs were $487,000. The final quoted price was $585,000, so in truth the profit is $98,000, or 20.6 percent.

First, the consultant is taking a considerable risk in quoting a lump sum price for the development of a design of a double deck structure in a rather uncharted field. There have been certain orthotropic structures designed, but none to our knowledge in the double deck category which accentuates the problem such as the Fremont Bridge proposes.

Second, the consultant in the agreement is required to accept full responsibility for any errors in design which may occur. In a structure as intricate as this one, there can undoubtedly be errors crop up which may need correction. The consultant, in quoting a fixed fee, is taking a somewhat excessive gamble and must set his profit fee accordingly. This profit of 20.6 percent might well turn out to be no profit at all and I am extremely pleased that the consultant is willing to take this risk.

In view of the fact that our detailed analysis of the cost is approximately 5 percent above that quoted by the consultant, I would earnestly recommend your approval of the price quoted and would ask early notification of your concurrence.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

TE:ja

Attachments

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant
L. H. Young

FREMONT BRIDGE

9-9-66
TCR

Sta. 346+30 to 367+70=2140

The following estimated "Payroll Cost" for the design of the Fremont Bridge is based on the following factors:

1. Man hours required for complete design:

   Based on a curve, copy attached, worked up from actual design time for approx. 162 bridges designed by the department in the years of 1962 thru 1964.

2. Breakdown of total design time into component parts:

1.	Preliminary Design & Estimates	14%
2.	Final Design & Drawings	72%
3.	Specifications	3%
4.	Estimate of Contract Cost	1%
5.	Checking Shop Drawings	10%

The above percentages are arbitrary and are based on approximate time required in studies of past designs.

Att.

Form B-130—3262—4-64

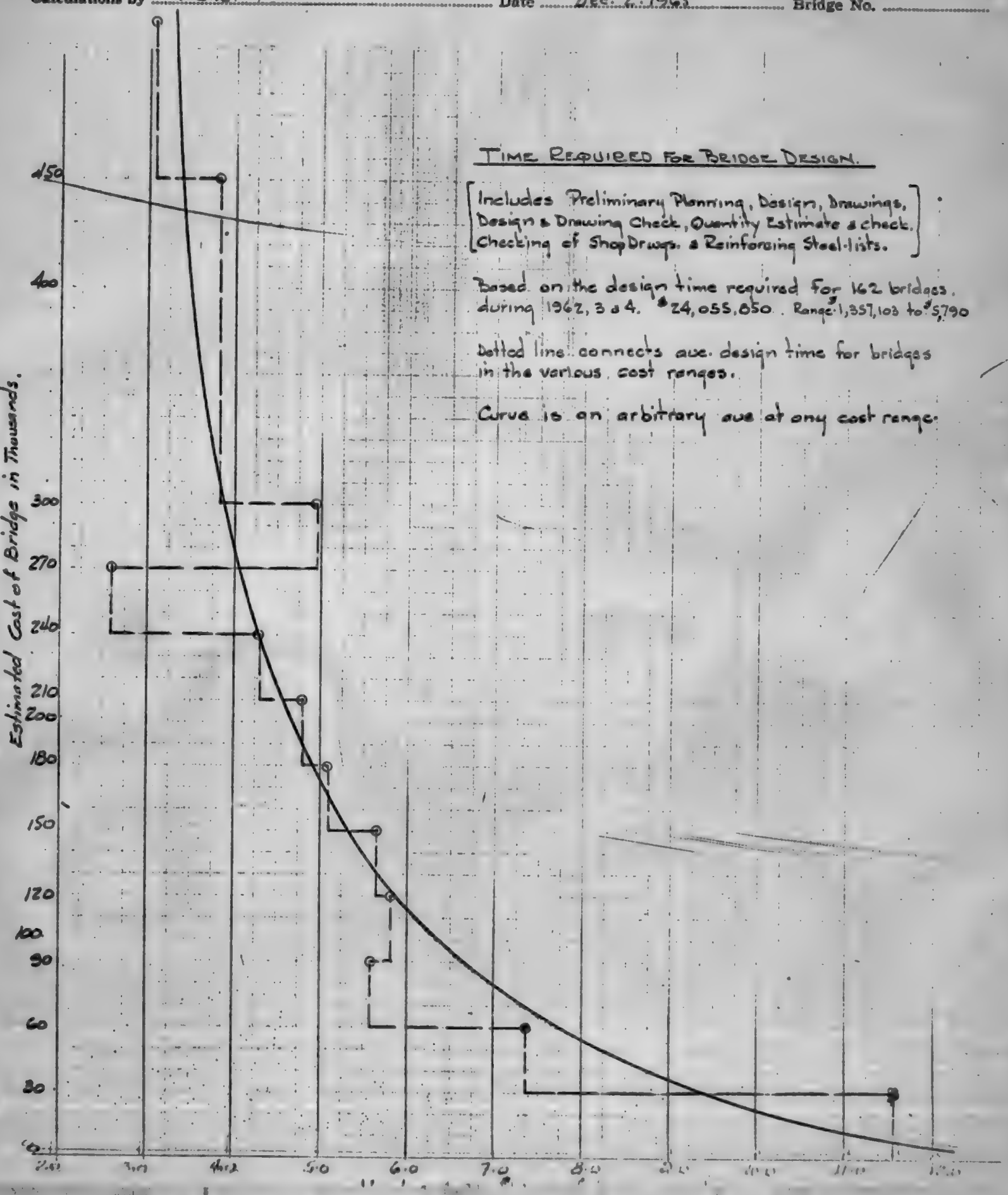
SP*6120-734

Oregon State Highway Department
BRIDGE DESIGN SECTION

Sheet .....

Bridge ..... County .....

Calculations by T.C.R. Date Dec. 7. 1965. Bridge No. .....



TIME REQUIRED FOR BRIDGE DESIGN.

[Includes Preliminary Planning, Design, Drawings, Design & Drawing Check, Quantity Estimate & check. Checking of Shop Drwgs. & Reinforcing Steel-lists.]

Based on the design time required for 162 bridges during 1962, 3 & 4. $24,055,850. Range $1,357,103 to $5,790

Dotted line connects ave. design time for bridges in the various cost ranges.

Curve is an arbitrary ave at any cost range.

9-6-66
T.C.R

FREMONT BRIDGE

STA 346+30 To 367+70 = 2140 LNFT

EST. Cost of 2555' R.R.S.D = $17,220,000
" " " 415' @ $3000/LF = 1,245,000

Estimated Cost of 2140' of Br = $15,975,000 Use $16,000
(Original Est. 7-21-66 based on $18,220,000 = 2945' bridge Length)

Payroll Cost.

~~1. Preliminary Estimates & design etc~~	~~7300 × $5.30~~	~~38,700~~ Complete
2. Design & Working drwgs	37,400 × $5.30	198,000
3. Const. Specifications	1,640 × 5.30	8700
4, Const. Cost Est.	520 × 5.30	2.750
5. Checking Shop Drwgs.	5200 × 5.30	27.500
Total = 236.950		Use $237,000

Foundation Report. Complete.

Extra Ordinary Expense

1 Salary of Consultants	48,000	
2 Expenses	10,000	
3 Travel.	2,000	
	60,000	$60,000

Payroll Burden & Fringe Benefits Cost.

1. 20% of Payroll cost. 237,000 × .2 Total $47,400

General Overhead.

1. 80% of Payroll cost. 237,000 × .8 Total. $189,600

Profit.

1. 15% of all Costs. 237 + 60 + 237 = 534,000 × .15 Total $80,100

9-6-66
T.C.R.

FREEMONT BRIDGE STA 346+30 to 367+70 = 2140 Lin. ft.

Comparison of Estimates.	P.B.O.E.D.	Stu's.
№1 DIRECT PAYROLL COST.		
1 Substructure.	18,000	
2 Superstructure	89.000	198,000
3 Specifications.	9.000	8.700
4 Cost Estimate	—	2,800
5 Shop drawings	32,000	27.500
6 Signs	2,000	
7 Deck Surfacing	6,000	
8 Wind tunnel	3.000	
9 Borings	2,000	
10 Consultant	1 000	
11 Computer	1.000	
12 Escolation	10,000	
13. Contingency.	17,000	
	#190,000	#237,000
№2 OUT OF POCKET EXPENSES (EXTRA ORDINARY).		
1. Deck Surfacing.	6,000	
2 Wind Tunnel.	30,000	
3 Consultant	6,000	
4 Computer	17,000	
5 Consultant (Salem).	10,000	48,000
6. Borings.	26,000	
7. Consultant per diem		10,000
8. " Travel exp.		2.000
9. Contingency.	12,900	
	107,000	60,000
№3 OVERHEAD		
1 Pay Roll Burden & Fringe Benefits		47,400
2 General Overhead.	190,000	189.600
	190,000	237,000
№4 PROFIT.		
11 Profit	[illegible]	[illegible]

9-6-66
T.C.R

FREMONT BRIDGE STA 346+30 to STA 367+70 = 2140 Lin Ft.

Comparison of Estimates

Summary.

1	Direct Payroll Cost	$190 000	$237.000	
2	Out of. Pocket Expense	107 000	60.000	
3.	Overhead.	190 000	237 000	
4	Profit.	100000	80100	
	Total.	$587,000	$614.100	
	Difference.		+$27,100	4.4%

Direct Payroll Cost

Substructure	18,000	
Superstructure	89,000	
Specifications	9,000	x
Shop Drwgs	32,000	x
Signs	2,000	
Deck Surfacing	6,000	
Wind Tunnel	3,000	
Borings	2,000	
Consultation (Seismic)	1,000	
Computer	1,000	#
	163,000	
Escalation 6%	10,000	
Contingency 10%	17,000	#
	Total D.P.C	190,000 ←

Out-of-Pocket Expenses

Deck Surfacing	6,000	
Wind Tunnel	30,000	
Consultant	6,000	
Computer	17,000	
Consultation (Seismic)	10,000	
Borings	26,000	#
	95,000	
Contingency 15%	12,000	#
	Total O.P.E	107,000

Payroll	£ 190,000	
100%	£ 190,000 =	£ 380,000
O.P.E		107,000
		£ 487,000
Profit		100,000
		£ 587,000

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS
CONTINUING THE ENGINEERING PRACTICE
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEekman 3-6300

MAURICE N. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

September 6, 1966

Mr. Forrest Cooper
State Highway Engineer
State of Oregon
State Highway Department
Salem, Oregon 97310

Attention: Mr. Tom Edwards
Assistant State Highway Engineer

Dear Sir:

Re: Fremont Bridge
Interstate Route 405

On Thursday, September 1, 1966, Mr. Fiore, of our staff, and myself were in your office to present and discuss our proposal on the Fremont Bridge over the Willamette River in Portland.

After considerable discussion and several telephone conversations, subsequent to our meeting, it was decided that we should submit to the Department, our breakdown of our overhead. We have done this and the following tabulation lists our overhead percentage as closely as possible to the items in "Exhibit A" attachment to memorandum about employment of consultants for engineering services PPM 40-6 as of July 1, 1966.

Taxes	6.71%
Insurance, including accident, liability, group life, valuable papers.	2.05
Depreciation and Amortization	0.65
Administration, including supervision, secretarial, clerical, bookkeeping, library, unassignable staff time	40.50
Employee established pension plans and related allocation; sick, vacation and holiday leaves	21.80
Printing, stationery, printing supplies	4.20
Professional services, including specialists, legal, and auditing	1.12
Travel Expenses not assigned to client	0.50
Telephone and Telegraph	1.50
Personnel procurement	3.00
Fees, dues, publications, professional meetings	2.50
Utilities and maintenance, and rent	6.30
Rental of equipment	0.60
Office miscellaneous expenses	4.50
Total	95.93%

Also attached is one copy each of two tabulations showing grades of personnel and allocation of manpower. We, as you know, have used 100% as a multiplier for our overhead. Tabulation of this item, as attached, is slightly less. We know that our overhead,within less than a year, will increase in certain items such as F.I.C.A., Social Security and vacation leave. These litems could well make up the small difference.

We trust that the foregoing information will be sufficient for your purpose.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

Alfred Hedefine
President

AH:hh
Enclosures

(Originals sent to BPR due to better legibility - per T. E.) fa.

RECEIVED
SEP - 8 1966
OREGON
STATE HIGHWAY COMMISSION

To accompany our letter of September 6, 196

FREMONT BRIDGE

ALLOCATION OF MANPOWER

(MANDAYS)

ITEM	Subprofessional Grades			Professional and Technical Grades								Total
	A	B	C	I	II	III	IV	V	VI	VII	VIII	
Substructure		40	80			15	50	100	140	20	5	450
Superstructure		150	220		50	120	500	590	350	190	30	2200
Specifications									190			190
Shop Drawings						110	150	225	190	50	20	745
Signs			10				40			5		55
Deck Surfacing								20	75	15	10	120
Wind Tunnel								20	30	10	5	65
Borings									15	15	5	35
Consultation (Salem)								4	4	8	4	20
Computer								2	12	4	2	20

Per diem used by OSHD in analysis

Per diem* quoted is average by OSHD via phone 9/8/66

Parsons, Brinckerhoff, Quade & Douglas

*Hedefine states, "we have a sliding scale with a variation of as much as $10 per diem in each rate.

~ GRADES OF PERSONNEL ~

GRADE	DEPARTMENTS								
	STRUCTURES	HIGHWAY	MECHANICAL	ELECTRICAL	ARCHITECTURAL	SOILS	SPECIFICATION	CONSTRUCTION	S
A	Engineering Aide, Jr. Draftsman, Tracer	Technical Assistant	Jr. Draftsman, Tracer	Jr. Draftsman, Tracer	Junior Architectural Draftsman			Engineering Aide	Jr.
B	Engineering Draftsman	Tracer	Draftsman	Electrical Draftsman	Architectural Draftsman, Tracer			Engineering Technician, Inspector	E D
C	Sr. Engineering Draftsman, Detailer	Special Master Draftsman	Senior Draftsman	Senior Electrical Draftsman				Sr. Eng. Tech., Sr. Inspector, Party Chief	D
I	Jr. Structural Design Engineer	Junior Design Draftsman	Junior Mechanical Engineer	Jr. Electrical Design Engineer		Junior Design Engineer		Engineering Technician, Inspector	
II	Jr. Structural Design Engineer	Design Draftsman	Des. Draftsman, Des. Engineer	Jr. Electrical Des. Engineer (T) or (P)	Junior Architect	Designer		Engineering Technician, Inspector.	
III	Structural Design Engineer	Junior Design Engineer	Designer, (T) Mech. Engineer (P)	Electrical Engineer	Junior Architect	Design Engineer		Assistant Engineer, Party Chief	
IV	Structural Design Engineer	Design Engineer	Sr. Designer, (T) Mech. Engineer (P)	Electrical Engineer	Intermediate Architect	Design Engineer		Office Eng., Chief Inspector, Asst. Res. Eng.	
V	Sr. Structural Design Engineer	Job Engineer	Senior Mechanical Engineer	Senior Electrical Engineer	Senior Architect	Design Engineer	Junior Specifications Writer	Resident Engineer	
VI	Assistant Section Head, Sr. Engineer	Assistant Deparment	Sr. Mech. Eng., Asst. Dept. Head	Senior Electrical Engineer	Senior Architect	Senior Design Engineer	Senior Specifications Writer	Asst. Dept. Head., Resident Eng.	
VII	Section Head, Staff Engineer	Department Head	Department Head	Department Head	Assistant to Chief Arch., Chief Arch.	Supervisor	Department Head	Department Head	
VIII	Division Head								

To accompany letter of
SEPT. 6, 1966

ADES OF PERSONNEL ~

DEPARTMENTS							
ITECTURAL	SOILS	SPECIFICATION	CONSTRUCTION	SANITARY	REPORTS	PLANNING	TRANSPORTATION
Junior hitectural Draftsman			Engineering Aide	Jr. Draftsman	Jr. Draftsman		Jr. Draftsman
hitectural aftsman, Tracer			Engineering Technician, Inspector	Engineering Draftsman	Senior Draftsman		Engineering Draftsman
			Sr. Eng. Tech., Sr. Inspector, Party Chief	Engineering Draftsman	Draftsman		Senior Engineering Draftsman
	Junior Design Engineer		Engineering Technician, Inspector				Junior Engineer
Junior chitect	Designer		Engineering Technician, Inspector.	Junior Engineer	Assistant Editor	Junior Planner	Engineer
Junior chitect	Design Engineer		Assistant Engineer, Party Chief	Junior Engineer	Assistant Editor		Design Engineer
ermediate rchitect	Design Engineer		Office Eng., Chief Inspector, Asst. Res. Eng.	Engineer			Senior Engineer
Senior rchitect	Design Engineer	Junior Specifications Writer	Resident Engineer	Senior Engineer			Job Engineer
Senior Architect	Senior Design Engineer	Senior Specifications Writer	Asst. Dept. Head., Resident Eng.	Head Engineer	Assistant Department Head		Assistant Department Head
sistant to ief Arch., ief Arch.	Supervisor	Department Head	Department Head	Department Head	Department Head	Planner	Project Engineer
							Division / Department Head

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS NEW YORK, N.Y.

RECEIVED
SEP 6 - 1966
FOR FILING

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS
CONTINUING THE ENGINEERING PRACTICE
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6800

I-405-8(17)303
7276

MAURICE M. QUADE
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RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

August 31, 1966

Mr. Forrest Cooper
State Highway Engineer
State of Oregon
State Highway Department
Salem, Oregon 97310

Dear Mr. Cooper:

Re: Fremont Bridge
Interstate Route 405

In accordance with your letters of June 24 and July 6, 1966 and subsequent telephone conversations with Mr. Tom Edwards of your staff, we are submitting a proposal for the necessary engineering services for the design of the substructure and the superstructure of the proposed Fremont Bridge.

We understand that the Bureau of Public Roads will participate in the building of this project and our proposal should be based on PPM Manual dated August 23, 1965. The structure selected for the crossing is to be in accordance with the configuration shown as Design S-1C on Figure 2 in our report "Alternate Designs for the Fremont Bridge" dated April 18, 1966.

The roadway width for both decks is to be 57 feet curb-to-curb and the length of the bridge to be designed is 2,140 feet.

We understand that our proposal for engineering services for the design should be based on two construction contracts: one for the superstructure and one for the substructure.

NOTED
TOM EDWARDS

As requested we are not submitting a proposal at this time for technical inspection and field administration of the construction contracts for the bridge.

We are looking forward to this assignment and anticipate an enjoyable association with the Oregon State Highway Department.

Sincerely yours,

Alfred Hedefine

Alfred Hedefine
President

AH/jc

To accompany our letter of August 31, 1966
Parsons, Brinckerhoff, Quade & Douglas, Inc.

PROPOSAL FOR THE FREMONT BRIDGE OVER THE WILLAMETTE RIVER - PORTLAND, OREGON

Design Services

Scope

Parsons, Brinckerhoff, Quade & Douglas, Inc. proposes to furnish the Highway Department of the State of Oregon, the necessary engineering services to design and to prepare contract plans and specifications for a three-span continuous stiffened tied arch over the Willamette River in Portland, Oregon. This bridge is required to connect the Stadium Freeway (U.S. Interstate Highway Oregon I-405) west of the River with the Fremont Street Interchange of Interstate I-5 east of the River. The limits of the structure to be designed under this proposal is between stations 346+30 and 367+70, a total length of 2,140 feet. The structure will be designed according to 1964 A.A.S.H.O. specifications for HS 20 - 44 for loading and as modified for military loading. It is planned that construction will be divided into two contracts: one for the substructure and one for the superstructure. It is understood that the highway approaches and ground surveys will be performed by the Department and are not part of our assignment. This proposal is being submitted on the basis of a lump sum fee and in accordance with the requirements of the Bureau of Public Roads' PPM Manual dated August 23, 1965.

The main span of the bridge will have minimum vertical clearances above mean low water elevation of 175 feet at the center of the span and 167 feet at the east and west harbor lines.

The bridge will have a center span of 1,250 feet with side spans of 445 feet and will support two roadways each 57 feet wide between curbs and each carrying four lanes of traffic. It is planned that the upper roadway will have a steel orthotropic deck covered with a surfacing, the final selection of which will be made during the development of the design. In order to progress the work the design of the upper roadway will be based on a wearing surface weighing 30 pounds per square foot. The lower roadway will have a reinforced concrete deck. The bridge will be provided with lighting for the roadways, aerial navigation and river traffic. The structure will be supported on reinforced concrete piers.

We will include in our work the development of the details of the roadway joints at each end of the three-span continuous arch structure and will coordinate the details of our design with the flanking span structural system which will be developed by the Department. Reinforcing bar detailing and placing plans will

NOTED
TOM EDWARDS

not be required to be shown on the contract plans. The Department will furnish all field information and ground surveys for the design of the bridge.

As part of the design contract, we will review, check and approve, when satisfactory, all shop drawings pertaining to structural steel, concrete, reinforcing bars, electrical details and all other permanent parts of the bridge. Also, we will review, check and approve, in general, the contractor's construction and working drawings for cofferdams, formwork, falsework, erection procedures and other work not a permanent part of the structure. However, these drawings will be checked only for general sizes and arrangements of members, overall dimensions and loadings.

As instructed we will arrange with the firm of consultants of Dames & Moore to provide borings and subsurface investigations, including all tests, laboratory analyses, soils report and recommendations for foundation design. We will include in this proposal the cost of administering the work of the soils engineer.

The preparation of the contract plans and specifications will be to the same standards of accuracy and coverage that the Department adheres to in its own work. All final contract plans and drawings are to be submitted to the Department as pencil tracings on Mylar or Imperial Cloth.

We will prepare supplementary provisions to the State of Oregon Standard Specifications and will assist the Department in analyzing the construction bids previous to making an award.

In the event the Department provides its own forces for the technical inspection and administration of the construction contracts on this project, we will under these conditions provide all the necessary field consultation during the period of construction as requested by the Department. The cost for such consulting services will be paid for as described under "Reimbursement".

The cost of interpreting the contract plans and specifications and design and detailing work necessary to correct errors in our plans will be borne by us. However, if the Department wishes to make changes in the design, contract plans or specifications during the construction, that in no way involve an error on our part, the cost shall be borne by the Department on the basis of "Extra Work" as stated under "Reimbursement".

Reimbursement

For providing the necessary engineering services to design the bridge described under "Scope" of this proposal and to prepare and produce separate contract plans and specifications for a Substructure Contract and a Superstructure Contract, we propose a lump sum fee of Five Hundred and Eighty Five Thousand Dollars ($585,000).

For consultation during field construction of the bridge, we propose reimbursement for such consultation on the basis of a "Per Diem" of $200.00 plus travel expenses and subsistence.

For any design services approved by the Department as Extra Work, during this project the reimbursement proposed is on a cost plus basis as follows:

1. Direct payroll equal to the actual costs for wages or salaries of personnel engaged exclusively upon such work.

2. Plus an amount equal to 24 percent of Item 1 to cover payroll costs of social security; Federal old age compensation; Federal unemployment compensation; State unemployment compensation; sick leave, vacation and holiday pay, major medical and group insurance benefits; deferred compensation and bonuses.

3. Plus an amount equal to 100 percent of Item 1 to cover overhead consisting of such items as principals' time; profit; unallocated salaries; office expenses; supplies and equipment; audit and legal; undistributed telephone, telegraph and reproduction; administration and in general the costs for doing business.

4. Plus out-of-pocket expenses directly attributed to the job, such as travel, lodging and subsistence when away from the home office and car rental.

Time Schedule

1. We will prepare a functional plan of the bridge for review and approval by all agencies involved within two (2) months after receipt of written notice to proceed.

2. We will complete sufficient work to make a preliminary submission of the contract plans and specifications for the substructure for review by the Department and the Bureau of Public Roads within a period of six (6) months after receipt of approval of the functional plan.

3. The final substructure contract plans and specifications will be submitted within two (2) months of the receipt of all comments, revisions, etc. resulting from review by the Department, and any other agencies involved, of the preliminary submission of the substructure contract plans and specifications.

4. The preliminary submission of the contract plans and specifications for the superstructure will be submitted for review within a period of nine (9) months after receipt of approval of the functional plan.

5. The final superstructure contract plans and specifications will be submitted two (2) months after receipt of all comments, revisions, etc. resulting from the review by the Department, and any other agencies involved, of the preliminary submission of the superstructure contract plans and specifications.

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Direct Payroll Cost

Substructure	$ 18,000	
Superstructure	89,000	
Specifications	9,000	✓
Shop Drwgs	32,000	✓
Signs	2,000	
Deck Surfacing	6,000	
Wind Tunnel	3,000	
Borings	2,000	
Consultation (Salem)	1,000	
Computer	1,000	
		$ 163,000
Escalation 6%		10,000
Contingency 10%		17,000
		$ Total D.P.C. 190,000 ←

Out-of-Pocket Expenses

Deck Surfacing	6,000	
Wind Tunnel	30,000	
Consultant	6,000	
Computer	17,000	
Consultation (Salem)	18,000	
Borings	26,000	
		$ 95,000
Contingency		12,000
		$ Total O.P.E 107,000

NOTED
JOM EDWARDS

Payroll	$190,000	
100%	$190,000	
		$380,000
O.P.E.		107,000
		$487,000
Profit		100,000
		$587,000 ←

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I-405-8(17)303
7276

Oregon State Highway Department
Salem, Oregon 97310

No. 338

Att: Mr. R. L. Porter
Deputy State Highway Engineer

TO

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

165 BROADWAY, NEW YORK 6, N. Y.

July 28, 1966

FINAL INVOICE

For Engineering and Architectural Services in connection with the additional studies for the Fremont Bridge over and across the Williamette River in Portland, Oregon, in accordance with our agreement dated February 8, 1966 and letter of MN Quade, dated December 6, 1965.

Salaries of Staff - See Schedule "A" Attached		$ 5.314.16
	Total Reimbursable Cost	5.314.16
Lump Sum Fee		11,000.00
	AMOUNT DUE	$ 16,314.16

I certify the charges contained in this bill are correct and have not been previously billed.

Alfred Hedefine
A. Hedefine

Orig to Mason 8-8-66

RECEIVED
AUG 8 1966
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
AUG - 8 1966
OREGON
STATE HIGHWAY COMMISSION

NOTED
RON EDWARDS

SCHEDULE "A"

Salaries of Staff	Hours	Rate	Amount	
Nov. 20 to Dec. 17, 1965				
M. E. Fiore	2	9.00	$ 18.00	
J. Swindlehurst	1	5.00	5.00	
C. Krakowski	7	2.50	17.50	40.50
Dec. 18, 1965 to June 14, 1966				
M. E. Fiore	5	9.00	45.00	
J. Swindlehurst	17	5.00	85.00	
V. Sepcenko	64	5.25	336.00	466.00
Jan. 15 to Feb. 11, 1966				
M. E. Fiore	6	9.00	54.00	
J. Connolly	10	2.60	26.00	
" " (OT)	1	2.60	2.60	
J. Swindlehurst	120	5.00	600.00	
" " (OT)	4	5.00	20.00	
J. G. Boyd	5	5.50	27.50	
" " (OT)	5	5.50	27.50	
V. Sepcenko	157	5.25	824.25	
" " (OT)	4	5.25	21.00	
F. H. Ho	11	4.00	44.00	
B. Ear	71	4.05	287.55	
R. W. Goodwin	1	3.75	3.75	1,938.15
Feb. 12 to March 11, 1966				
M. E. Fiore	2	9.00	18.00	
J. Connolly	3	2.60	7.80	
J. Swindlehurst	141	5.00	705.00	
C. Vaccaro	1	8.00	8.00	
J. G. Boyd	10	5.50	55.00	
V. Sepcenko	128	5.25	672.00	
F. H. Ho	50	4.00	200.00	
G. M. Dave	11	4.00	44.00	1,709.80
Mar 12 to Apr 8, 1966				
R. H. Arents	28	4.213	117.96	
M. E. Fiore	10	9.00	90.00	
J. Swindlehurst	52	5.00	260.00	
" " (OT)	2	5.00	10.00	
A. P. Snyder	2	5.25	10.50	
A. E. Flores	4	3.10	12.40	
V. Sepcenko	48	5.25	252.00	
" " (OT)	2	5.25	10.50	
G. M. Dave	54	4.00	216.00	979.36
Apr. 9 to May 6, 1966				
M. E. Fiore	4	9.00	36.00	
J. Swindlehurst	1	5.00	5.00	
P. F. Brautigam	8	6.25	50.00	
E. C. Eisenhuth	4	3.85	15.40	
A. E. Flores	1	3.10	3.10	
V. Sepcenko	2	5.25	10.50	
P. Loucas	3	3.10	9.30	
H. L. Crane	14	2.25	31.50	160.80

Salaries of Staff Cont'd June 4 to June 30, 1966	Hours	Rate	Amount	
J. Swindlehurst	3	5.25	15.75	15.75 5,310.36
Premium Time **Jan. 15 to Feb. 11, 1966**				
J. Connolly	1/2	2.60	1.30	1.30
Mar. 12 to April 8, 1966				
J. Swindlehurst	1/2	5.00	7.50	2.50
			TOTAL	$ 5,314.16

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I-405-8(17)303
7276

Salem, Oregon
July 21, 1966

Fremont Bridge
Interstate Route 405

MEMO TO THE FILE

On this date I discussed by telephone the initial phases of preparation of a design and construction consultant services contract with Alfred E. Hedefine of Parsons, Brinckerhoff, Quade and Douglas.

Mr. Hedefine, due to the current air transportation strike, could not forecast what time he might be able to reach the State of Oregon. Consequently, the following tentative assumptions were agreed upon:

PBQ&D will prepare a rough draft proposal based on

1. A lump sum contract for design services;

2. A per diem plus fixed fee for consultant engineering services;

3. Basis for payment for computer time shall be on a per diem;

4. The employment of a soils foundation firm on the following bases:

(a) Preparation of a proposal for foundation exploration based on a lump sum for staging costs;

(b) A lump sum for analysis of data and preparation of a report plus per diem costs for boring work; and

(c) A lump sum fee on the prime consultant's cost of analyzing and incorporating the soil consultant firm's report into the final presentation to the Highway Department.

In the discussion, Mr. Redefine indicated that they had used Dames and Moore extensively and would use them on this project, and asked that I call Dames and Moore and advise them that they were to prepare a proposal to PBQ&D. Also, that Dames and Moore be furnished with the data currently available as to structure type and pier locations.

In discussion with the Bureau of Public Roads after the phone conversation with Mr. Redefine, it was apparent that the Bureau would prefer separate agreements for the design services and the construction engineering services. PBQ&D were so notified by Telex (Western Union Night Letter).

Also discussed with Mr. Redefine was the advisability of including in the design one span on the westerly end of the main bridge in the same manner as the one originally proposed wherein Vierendeel trusses were included on the easterly end of the main structure. We believe this appropriate since the problems of motion and loading at the end piers would be resolved in the main structure contract and the approach span work would then be much simpler.

Tom Edwards
Assistant State Highway Engineer

TE:jwa

cc Forrest Cooper
R. L. Porter
F. B. Klabee
Victor D. Wolfe
Ivan Merchant

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JUL 7 1966
FOR FILING

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7276

Lp

July 6, 1966

AIRMAIL

Mr. Alfred Hedefine
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York, N. Y. 10006

Dear Mr. Hedefine:

Re: Fremont Bridge
Interstate Route 405

This is in response to your June 28 letter advising us of your firm's availability to undertake an engineering contract on the proposed Fremont Bridge in Portland.

We are anxious to get the project underway as rapidly as possible and the following dates would be convenient to this Department for a meeting to discuss the matter: afternoon of July 14; anytime on July 15; afternoon of July 18; or, anytime on July 19. If these suggestions do not meet your convenience, I am sure we can arrange other mutually satisfactory dates upon very short notice.

Mr. Tom Edwards, Assistant State Highway Engineer, who is in charge of our Bridge Division, has had considerable experience in negotiating for consultant agreements and has a thorough knowledge of Bureau of Public Roads requirements. It is our desire that Mr. Edwards represent the Department in this negotiation and be in available on any of the dates mentioned.

Salem is about 48 miles south of Portland on Interstate 5 and if you need transportation from the Portland airport or from a Portland hotel, we will be glad to make the necessary arrangements.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

cc Forrest Cooper
Tom Edwards
Victor D. Wolfe

RLP:ms

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS

FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885

NEW YORK · SAN FRANCISCO

WILLIAM BARCLAY PARSONS 1885-1932
HENRY M. BRINCKERHOFF 1919-1945

MAURICE N. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

June 28, 1966

Mr. R. L. Porter,
Deputy State Highway Engineer
State Highway Department
Salem, Oregon 97310

Re: Fremont Bridge
Interstate Route 405

Dear Mr. Porter:

I have your letter of June 24, 1966 with reference to the above bridge project and your inquiry as to our firm's interest and availability in undertaking the assignment for the detailed design, preparation of specifications and estimates. We are indeed interested and available to go to work on this assignment for the Department. We are also pleased that our firm is acceptable to the Bureau of Public Roads.

We too have experienced some difficulties with the Bureau of Public Roads when negotiating some of our more recent contracts in which they have been involved, but some how or other we have managed to reach an acceptable conclusion in our negotiations. We have a contract at the present time with the State of North Carolina for the design and supervision of construction of a relatively large bridge crossing over the Cape Fear River in which the Bureau is involved on a 50-50 basis. The substructure contract for this bridge will be advertised in early July. In this case the engineering contract for certain portions of the work was based upon a total lump sum fee, while other portions were based on costs, plus out-of-pocket expenses, plus a fixed fee. A proposal presently being formulated to submit to the State Highway Department of Virginia, for a bridge across the James River and in which the

Mr. R. L. Porter June 28, 1966

Bureau of Public Roads is involved, is being presented on the basis of a total lump sum fee. We have a feeling that the Bureau may suggest in the final analysis a reimbursement formula of costs, plus out-of-pocket expenses, plus a fixed fee. We are well aware of the requirements for detailed breakdown of all portions of the fees that the Bureau of Public Roads demands, and agree that sometimes negotiating procedures become rather tedious and drawn out and may consume an unpredictable amount of time.

We are ready to contract for this assignment on any basis of reimbursement that your Department would see fit, but since you have already asked me to comment on a satisfactory type, I will do so. If the scope of the work involved on this project is carefully and well defined, and understood by all parties - a total lump sum fee would be first choice. Second preference would be a formula which provides for reimbursement of all costs and out-of-pocket expenses plus a fixed fee sum. Of course there must be agreement on what constitutes "costs" and "out-of-pocket" expenses. The third choice would be on a percentage fee basis - for the design phase of the work a fee equal to a percentage of a mutually agreed upon estimated cost of construction, and for the second phase, that of technical inspection of construction, a percentage fee of the actual construction cost of the completed bridge.

I agree with your previous decision that it is preferable to divide the total work into two main construction contracts - one for the substructure; and one for the superstructure.

We are at your service to discuss the further formulation of a proposal for an engineering contract, or any other matters pertaining to the proposed bridge. We would be pleased to meet in your offices at any time that is convenient to you.

Trusting the foregoing information is satisfactory.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

Alfred Hedefine

RECEIVED
JUN 29 1966
OFFICE OF
STATE HIGHWAY ENGINEER

AH/mr

cc: Mr. F. Cooper

RECEIVED
JUN 27 1966
FOR FILING
I-405-8(12)303
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June 24, 1966

Mr. Alfred Rudofine
Parsons, Brinckerhoff, Quade & Douglas, Inc.
165 Broadway
New York, N. Y. 10006

Dear Mr. Rudofine:

Further reference is made to the matter of the proposed Fremont Bridge on Interstate Route 405 in Portland and to past correspondence and discussions with members of your firm as to the detailed design, preparation of specifications and estimates for this structure.

We have now reached the point where it is necessary to proceed with this feature as promptly as possible, and, because of preliminary work that P.B.Q. & D. has done on this project, this Department would like to have you undertake the work if you can accept the assignment.

We have tentative verbal approval from the Bureau of Public Roads that your firm is acceptable provided a satisfactory agreement can be negotiated. As Oregon makes only occasional use of private engineering services, we do not have a detailed and formal procedure for the selection of consultants. We have experienced considerable difficulty with the Bureau of Public Roads in the past in negotiating a fee schedule that will meet federal scrutiny and approval. The matter has been discussed with representatives of the Bureau and we suggest that possibly an agreement providing for a fee based on time and materials plus a fixed sum may be the simplest approach. The Bureau will require the fixed fee portion to be broken down and detailed rather comprehensively.

The purpose of this letter is to inquire if your firm is available to undertake this assignment and, if so, your comments on a satisfactory type of fee are requested.

In discussing this matter previously with Mr. Quade, it was felt desirable to split the work into two contracts, namely, piers and superstructure. We believe that there is enough foundation data on hand as far as the pier design is concerned but if some additional information may be needed, this Department can probably supply it.

May we hear from you at your early convenience.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms

cc Forrest Cooper
Tom Edwards
F. B. Klaboe
Victor D. Wolfe

RECEIVED
JUN 9 - 1966
FOR FILING

I-405-8(17)303
7276

June 8, 1966

Cornell, Howland, Hayes and Merryfield
1600 Western Avenue
Corvallis, Oregon

Gentlemen:

In line with your recent telephonic request, there is attached a copy of Figure 2 from the report of Parsons, Brinckerhoff, Quade and Douglas, "Alternate Designs for the Fremont Bridge over the Willamette River, Portland, Oregon". This will show the location of piers as requested.

Also enclosed is a map showing the location of the bridge, including proposed right of way width, and finally, as requested, a copy of the East Fremont Interchange.

The delay in forwarding this information was necessitated by the fact that the Highway Commission had not accepted the report.

If additional information is required, we will do our best to comply.

Very truly yours,

Enc.

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant

VDW:mc jva

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JUN 6 - 1966
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OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

I-405-8(17)303
7276

Salem, Oregon
June 2, 1966

SUBJECT:

To: MEMO TO FILE

On this date, the Highway Commission approved the firm of Parsons, Brinckerhoff, Quade, and Douglas to design the Fremont Bridge in Portland. Release of information re this will be made only from the Administrative Office.

The Commission approved the dates of July 11-13 for its summer inspection trip and accepted the invitation of Judge Ogle of Lake County to attend a Buckaroo Breakfast on the morning of July 13. The Commission ordered that a suitable two-motored plane with pilot and co-pilot be at the Lakeview Airport on the afternoon of July 12 to return Commissioner Simpson to Portland.

Instructed the State Highway Engineer to meet with interested groups in Polk County re highway matters as requested by State Representative Joe Rogers.

Instructed the Engineer to proceed with the construction of the John Day Highway at Dayville on the bypass line.

Instructed the Engineer to meet with the Sherman County Court and the city officials of Wasco re improvement of Highway 97 at Wasco.

Instructed the Engineer to attempt to work out an acceptable solution to the sale of the old maintenance site at The Dalles.

Asked that naming of a state park for former Chairman of the Commission, Milo K. McIver, be considered at the next meeting.

Issued instructions that a hearing be held on the Hanley Ranch-Brownsboro Section of the Lake of the Woods Highway.

MOTION FOR DISMISSAL

Forrest Cooper
State Highway Engineer

FC:fn
cc R. L. Porter
Tom Edwards
Lloyd F. Shaw
F. B. Klaboe
Victor D. Watts

Mr Jackson's sec. called Fred Jackson has meeting PM and advised that Jackson has meeting PM and advised that Jackson will not be able to meet with Junction until further notice.
7/5/66

cc to all

FORWARDED
MAY 20 1966
FOR FILING

I-405-8(17)303

7276

May 19, 1966

AP

Oregon State Highway Commission

Gentlemen:

On November 19, 1965, this Department was requested by the Bureau of Public Roads to have the firm of Parsons, Brinckerhoff, Quade and Douglas conduct further estimating relative to the Fremont Bridge on I-405 in Portland. You approved this procedure at the January 25 meeting.

The consultant has completed this assignment, and has submitted his report (copy attached). I recommend that it have your acceptance and approval.

We have been notified by the Bureau of Public Roads that it will approve Design S-1C (Figure 2) of the report, with a 52-foot deck. You will note from Table 7, page 27, of the report that this structure is estimated to cost $16,200,000.

I feel that a 52-foot deck is too narrow for a four-lane Interstate freeway and intend to continue to negotiate with the Bureau of Public Roads in an effort to secure approval for a 57-foot deck. As indicated in Table 7, this is estimated to cost $17,200,000.

On May 17, this was discussed by telephone with Chairman Jackson who gave his approval and I recommend that all matters pertaining thereto have your concurrence at the June 2 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

Attachment

cc: Floyd Query
R. L. Porter
Tom Edwards
Victor D. Wolfe
Ivan Merchant
C. H. Nelson
L. H. Young
A. E. Johnson

RLP:ms bg

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MAY 9 - 1966
FOR FILING

I-405-8(17)303
7276

Library

May 6, 1966

Mr. A. V. Parsons, Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon

Dear Mr. Parsons:

Attached are six copies of a report by Parsons, Brinckerhoff, Quade & Douglas entitled "Second Supplemental Report on Additional Designs for the Pregmat Bridge". These are being furnished to you in advance of a specific recommendation by this Department, which will follow in a few days.

This report was prepared in response to your request of November 19, 1965.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms
Att.

cc Forrest Cooper/att
Tom Edwards/att
Victor D. Wolfe
I. D. Marchant/att

RECEIVED
DEC 23 1965
FOR FILING

I-405-8(17)303
7276

December 22, 1965

LP.

Oregon State Highway Commission

Gentlemen:

The Bureau of Public Roads has requested that the proposed design for the Fremont Bridge as submitted by Ramsey, Brinckhoff, Quade & Douglas be further studied in an effort to see if a more economical stiffened tied arch structure can be developed. This would entail analyzing and estimating the cost of a slightly shorter span, an alternate design with diagonals in the center spans, and five or six other minor items.

Mr. Quade estimates that his firm can do the work in about three months' time, at an estimated cost of $16,000. The Bureau of Public Roads has approved the proposition as being eligible for Interstate Federal-aid participation. Mr. Jackson approved this matter on December 20 and it will be on the agenda for your consideration at the January 25 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Query
R. L. Porter
Tom Edwards
Victor D. Wolfe
I. D. Merchant
C. H. Maison
L. H. Young
A. E. Johnson

RLP:ms bg

RECEIVED
DEC 23 1965
FOR FILING

I-405-8(17)303
7276

December 22, 1965

Oregon State Highway Commission

Gentlemen:

The Bureau of Public Roads has requested that the proposed designs for the Fremont Bridge as submitted by Simmons, Brinkerhoff, Quade & Douglas be further studied in an effort to see if a more economical stiffened tied arch structure can be developed. This would entail analyzing and estimating the cost of a slightly shorter span, an alternate design with diagonals in the center span, and five or six other minor items.

Mr. Quade estimates that his firm can do the work in about three months' time, at an estimated cost of $16,000. The Bureau of Public Roads has approved the proposition as being eligible for Interstate Federal-aid participation. Mr. Jackson approved this matter on December 20 and it will be on the agenda for your consurrence at the January 25 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Query
R. L. Porter
Tom Edwards
Victor D. Wolfe
I. D. Merchant
C. H. Chilson
L. H. Young
A. E. Johnson

RLP:ms bg

RECEIVED
DEC 23 1965
FOR FILING

I-405-8(17)303
7276

December 22, 1965

Oregon State Highway Commission

Gentlemen:

The Bureau of Public Roads has requested that the proposed designs for the Fremont Bridge as submitted by Ammann, Whitenelloff, Quade & Douglas be further studied in an effort to see if a more economical stiffened tied arch structure can be developed. This would entail analyzing and estimating the cost of a slightly shorter span, an alternate design with diagonals in the center span, and five or six other minor items.

Mr. Quade estimates that his firm can do the work in about three months' time, at an estimated cost of $16,000. The Bureau of Public Roads has approved the proposition as being eligible for Interstate Federal-aid participation. Mr. Jackson approved this matter on December 20 and it will be on the agenda for your consurrence at the January 25 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Query
R. L. Porter
Tom Edwards
Victor D. Wolfe
I. D. Merchant
C. H. Maison
L. H. Young
A. E. Johnson

RLP:ms bg

Transcript of Agenda Item 4c
January 25, 1966, Commission Meeting

COOPER: 4c has to do with confirming the Chairman's action of December 20 approving further study on the design of the Fremont Bridge submitted by Parsons, Brinckerhoff, Quade and Douglas to see if a more economical stiffened tied arch structure can be developed. Estimated cost of this engineering study is $18,000 which was reported to you on December 22. This is a continuation of the items that were discussed by the Commission with the City of Portland, and subsequently Commissioner Bowes and myself discussed with the Bureau of Public Roads to make additional studies on the proposed tied arch structure there to see if economy may be affected. I would recommend your approval.

JACKSON: Any objections - (None). Question at this point. The arrangements we have had with these people has been a joint arrangement between ourselves and the Bureau of Public Roads to evaluate the various bridge designs that are involved in the Fremont Bridge. Now this is a separate contract having to do with consultants work on designs. Insofar as the preparation of the plans and specifications of the bridge design that is selected that is another contract and has no relationship with this at all. Is that the correct understanding?

COOPER: You are correct, Sir. We, as you know, had the firm of Parsons, Brinckerhoff, Quade and Douglas make initial studies on types of this bridge. After study of additional types and receiving the report from the engineering firm, it was determined by the Commission and the City of Portland that the tied arch was the design - the acceptable design. There was a cost differential between this and some of the other designs and in order to resolve this, you will recall, I discussed this with the Bureau's personnel in Washington, D. C. They have tentatively agreed to the design although it was not finally approved, but it was a suggestion of the Bridge Engineer in the Bureau of Bridge Engineer, that his office work with the office of Parsons, Brinckerhoff, Quade and Douglas to study this refinement in this tied arch design to see if certain modifications can be made. These are not design concepts modifications. They are modifications within the type - the details of member and things of this type - spans and one thing and another, to see if they could not perfect some economy to bring the cost of this design closer to the cost of some of the other designs that were considered. There have been meetings between Mr. Erickson of the Bureau and Mr. Quade of the Quade firm and Mr. Quade is proceeding with the study of these modifications. When he comes up with that and his final cost figures, which I am sure he will discuss with Mr. Erickson in Washington, then we will be in a position to go ahead with the final design of the bridge and it will be followed of course by construction.

JACKSON: Now once the design of this bridge is finalized between ourselves and the Bureau, what responsibility will the Bureau have in the selection of the engineers to do the final design and specification work.

COOPER: The same responsibility they have in almost all of our other relationships with the Bureau. They have the power of veto.

JACKSON: They will not participate - the initial responsibility will be the State in the selection of an engineering firm.

COOPER: Yes, subject to approval or veto of the Bureau.

JACKSON: Now will that be a competitive bid proposition or a selection based upon investigation of the various firms who might be available for this job to determine their competency in this field.

COOPER: The latter, it will not be a competitive bid.

JACKSON: But the Bureau will be consulted in the selection of an engineering firm to do this job.

COOPER: Yes Sir, before approval to proceed with the design, we must have an agreement with the Bureau covering this matter. The initial action is with the State. We work with the Bureau - take our proposal to the Bureau and ultimately these things somehow always ends up in an agreement as to the firm -- proceed with the details.

FRIDLEY: There is nothing preventing the State - the Bridge Division to design it, is it?

COOPER: Other than, I don't know whether there is enough of us or not.

PARSONS: Mr. Chairman, may I make a comment. This cost figure that is being studied now by Quade will come up with some sort of a differential cost between this proposed stiffened tied arch design and the other conventional type design. The results of that cost study will then be presented to the Bureau of Public Roads and I imagine that will be material on which the final decision will be made.

FRIDLEY: Are you going to turn this over to the General Accounting Office for their okay before we move?

PARSONS: I don't think we are that far.

JACKSON: What I am getting at here is in the selection of the engineers who will finally prepare the detailed plans and specifications and supervise the construction of this bridge. from the engineering standpoint, we naturally are going to reflect the attitude of Uncle who is putting up 92 percent of this money in terms of the engineering firm that is going to be selected.

COOPER: This is very true.

JACKSON: Now let the record show that. After all Uncle is the guy that is putting up most of the dough and the selection of the engineering firm that is going to do the job is of necessity is going to be one in which the decision is going to be coordinated with the Bureau.

COOPER: Very definitely - a stronger word, I would say, is approved by the Bureau. We cannot proceed without approval of the Bureau. We, of course, work with them in the negotiating stages but in the final analysis the Bureau must say "yes".

JACKSON: What I am trying to get at - you guys can go round up bushes faster than I. The facts are that when we get down to the question of selecting an engineer on this thing, we are going to talk this thing over with the Bureau and we are going to select somebody that we know before hand is going to be people that they want.

COOPER: The people that they will approve.

JACKSON: The fact you might get them on a busy day and you come in there with some outfit and they say go ahead and let's get it out of our hair. I'm talking about that we are going to go through the normal process of discussing with them and in view of the participation of the Federal Government in the cost of this thing, we are pretty well stuck with the people that they feel are competent to spend Uncle's money in this connection.

COOPER: This is very true.

JACKSON: Let's put a period right behind that before anybody says anything more.

RECEIVED
DEC 21 1965
FOR FILING

I-405-8(17)303
7276

Sp.

December 20, 1963

AIRMAIL

Mr. M. H. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York, New York 10006

Dear Mr. Quade:

Re: Fremont Bridge
Oregon Project I-405-8(1)301

Reference is made to your December 6 letter relative to additional studies for the Fremont Bridge which contained your cost estimate of $18,000. We now have secured approval from the Bureau of Public Roads for you to make these additional studies and re-examinations as outlined in your letter and this is your authority to proceed. The Bureau has agreed that this exchange of letters can be considered a supplement to our original agreement of October 10, 1963.

During the past few months the Bureau of Public Roads has developed another requirement in the case of consultant engineering services, which is a non-collusion certification. Such a certificate has been prepared and executed by this Department; two copies are enclosed and it will be appreciated if you will execute one copy and return to us.

We are glad that you are able to undertake this additional work for us.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms
enc.
cc Forrest Cooper
Tom Edwards
Victor D. Wolfe

Form CO-121
(11-63)
(Prcs. by
A.O. 204-18)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

DATE: December 15, 1965

In reply refer to: 08-35-EC

FROM : A. W. Parsons, Division Engineer
Salem, Oregon

By: T. Dec
Engineering Coordinator

SUBJECT: Oregon Project I-405-8(1)301
Fremont Bridge

As requested by Mr. Porter's December 8 letter, we hereby approve the amendment of the original October 10, 1963 contract for the subject project for the consultant firm of Parsons, Brinckerhoff, Quade and Douglas as evidenced by the exchange of correspondence culminating with Mr. Quade's December 6 letter to Mr. Porter.

You are also authorized as of this date to proceed with this additional work at a total estimated cost of $18,000.

RECEIVED
DEC 16 1965
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
R. L PORTER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

Form CD-121 (1-65) (Prec. by A.O. 280-10)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

TO : Mr. Ernest Cooper, State Highway Engineer
Salem, Oregon

DATE: December 15, 1965

In reply refer to: 08-35-EC/550

FROM : A. W. Parsons, Division Engineer
Salem, Oregon

By: T. Dec
Engineering Coordinator

SUBJECT: Employment of consultants

We have been asked by our Washington office to remind you of the requirement for execution of the consultant's certification and the State's certification for all consultant agreements in accordance with PPM 40-6 (August 23, 1965). Furthermore, the certifications attached to the contract are to be incorporated by reference or identified with the contract, as indicated in the upper right corner of Attachment 2 to the PPM.

NOTED
R. L PORTER

RECEIVED
DEC 16 1965
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
DEC 8 - 1965
FOR FILING

I-405-8(17)303
7276

December 8, 1965

Mr. A. E. Doremus, Division Engineer
Bureau of Public Roads
477 Hassage Street, N. E.
Salem, Oregon 97301

Dear Mr. Doremus:

Reference is made to your letter of November 19 to which was attached Mr. Erickson's letter of November 16 to Mr. French relative to additional considerations on the Fremont Bridge (Oregon Project I-405-8(1)301).

Based on this correspondence and on verbal discussions with your office and with Mr. R. A. Stephenson in Portland, Doremus, Brinckerhoff, Quade & Douglas was asked to submit a proposal for investigating the seven items listed in Mr. Erickson's letter. A copy of the proposal is attached, which I believe is self-explanatory. Before preparing the proposal, Mr. Quade discussed the items with us and, I understand, with your Mr. Erickson in Washington, and his proposal is based on the outcome of these conversations.

As stated in Mr. Quade's December 6 communication, an exchange of letters will be satisfactory with his company if it is satisfactory to the State. We have no objection to this procedure provided it can have Bureau of Public Roads concurrence.

This letter is a request that you concur in this proposal so that the Fremont Bridge matter may be finalized. May we have your earliest consideration as I believe we cannot afford to carry this matter much longer or adverse public criticism may be encountered.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms
att.
cc Forrest Cooper
Tom Edwards/att
Victor D. Wolfe
I. D. Merchant/att

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
NEW YORK • SAN FRANCISCO

WILLIAM BARCLAY PARSONS 1885 - 1932
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RUSH P. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

December 6, 1965

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310.

Re: Fremont Bridge over the Willamette River, Portland. Proposal for Continuing Engineering Services for Preliminary Studies. Oregon Project I-405-8(1)301.

Dear Mr. Porter:

Your letter to us of November 29, 1965 refers to additional preliminary studies of the proposed Fremont Bridge and transmitted to us a copy of the following correspondence:

a. Memorandum dated November 19, 1965 from A. W. Parsons, Division Engineer BPR, to Mr. Forrest Cooper.

b. Memorandum dated November 16, 1965 from G. M. Williams, Director of Engineering and Operations, (written by E. L. Erickson, Chief, Bridge Division,) to B. M. French, Regional Engineer BPR, Portland.

The memorandum written by Mr. E. L. Erickson outlines the following seven items for possible further study and forms the basis for this proposal.

1. Reduction in the overall width of each roadway by 6 feet to conform to the minimum requirements as shown in Figure 4 - Case 4 of BPR Instructional Memorandum 40-1-65 dated September 9, 1965. While it is recognized that this reduction could be applied to all designs that have been studied in our Reports of August 1964 and July 1965 thereby resulting in reduction in cost of each, it is understood that for these proposed studies the intention is to apply the reduction in width to only Design S-1, the Stiffened Tied Arch. The work contemplated under this item is to so revise S-1 as required to develop an estimate of cost of the bridge with narrower roadways so that a comparison of cost between the two roadway widths can be evaluated. Our

report would also include a discussion of the relative merits of the two roadway widths.

2. Reduction in the length of main span for S-1 as much as possible - possibly 100 feet - still maintaining the required navigation clearances. We have made preliminary outline sketches of both Designs S-1 and S-1A to determine the effect on appearance. Obviously, the shorter main span (1250' vs. 1350') increases the rise in the center arch (by about 40 feet) and if the flanking piers are held in the present position, the side spans become so much longer in relation to the main span that there is a very substantial sacrifice in appearance. Since appearance is the only reason for considering Design S-1 at all, this sacrifice in appearance becomes important. If we can shorten the flanking spans to 445 feet by moving the southwest pier 80 feet to Station 367+70 (as was done for all designs in our Report of August 1964) the appearance is greatly improved. If it is the City of Portland that objects to the pier location at Sta. 367+70, perhaps they will reconsider the matter. Shortening the Northeast flanking span and the main span by the same amount would result in the use of two flanking spans @ 207'-6" instead of a single span @ 335'-0".

3. Introduction of diagonals below the lower deck (Mr. Erickson's memo incorrectly stated "between the two decks") at the ends. This is understood to consist of the development of our proposed Design S-1A to the extent that all other Designs have been developed in prior reports. This new design would take into account the narrower deck widths (Item 1) and the changes in span lengths (Item 2).

4. Re-examination of use of different steels and consideration of the use of A-36, A-440 and the new 60,000 psi.yield strength steel (in place of T-1 Steel). The proper and economic use of A-36 and A-440 steels has been previously considered in prior designs and will be considered in future designs. Here we would propose to evaluate the use of the new 60,000 psi yield strength steel for Designs S-1, S-1 as modified under Item 1 and Design S-1A as developed under Item 3. The new steel will require shop riveting as well as riveted or bolted end connections.

5. Consideration of use of A-441 steel for orthotropic deck plate and elimination of galvanizing. Prior designs are already based on the use of A-441 steel. The cost of galvanizing will be eliminated.

6. Study of the effect on economy of placing the tie at the level of the lower roadway. As recorded in our memo of December 3, 1965 (with copy to you) we informed Mr. Erickson that it was extremely doubtful that this study would show any measurable economy in steel or cost and that we had two basic reasons for choosing the upper deck for the tie. He considered these objections valid and agreed that the study would not be required but the subject should and will be discussed in our report.

7. Study of the effect on economy of using a Warren truss for the tie, supporting the roadways from the top and bottom chord levels. This is the proposal in our Design S-1B which was sent to Mr. Erickson inadvertently after the conference with him on November 12, 1965. We, in our office, are in unanimous agreement that this design is the least attractive of Designs S-1, S-1A and S-1B, and that it does not remove some of the basic objections to the S-1 Design with respect to flexibility and the problems of erection and jacking the component parts for closure. Since the primary object of further studies is to see if the cost can be reduced to a level that is acceptable to the BPR and your Department, there is no chance that Design S-1B can accomplish this if Design S-1A, which has a better appearance, can not do so. Mr. Erickson concurred and stated that no detailed investigation of Design S-1B would be required if these considerations are discussed in the Report. Other than such a discussion, no work is contemplated under this item. The elimination of Items 6 and 7 will greatly reduce the time, effort and cost of these additional studies.

In summary we propose to do the following:

A. Revise Design S-1 to evaluate the difference in cost of a bridge having both roadways reduced 6 ft. in width. All other criteria remain the same.

B. Revise Design S-1 for span lengths of 445'-1250'-445'-207'6"-207'6". All other criteria (including original roadway widths) to remain the same.

C. Develop and make a cost estimate for Design S-1A using reduced roadway widths, and span lengths of 445'-1250'-445'-207'-6"-207'-6".

D. Investigate the possible economy in the use of new 60,000 psi yield strength steel in Designs S-1, S-1 as modified in "A" and "B" and Design S-1A as developed in "C".

E. Eliminate galvanizing in the same Designs listed in "D".

F. Discuss Items 6 and 7 in our report.

We have made an estimate of the direct salary costs for the work outlined in Items A through F above. The man-days of technical time in all categories is estimated to be:

Item	Man-Days
A	20
B	90
C	50
D and E	10
F	Incl. in report
Total	170 Man-Days

Based on the above, the reimbursable costs would amount to about $7,000. The corresponding lump sum payment to us would be $11,000 made up of the following items:

Electronic computer including card punch input or equivalent	$1500
Overhead directly related to technical payroll	5000
Overhead, General Administration and Selling Expense	800
Preparing text and plates for Second Supplementary Report plus printing and binding	1300
Travel and subsistance one man - trip to Oregon	500
Miscellaneous expenses	100
Partners Time, Profit and Contingencies	1800
Total	$11,000

The total estimated cost is therefore $18,000.

We would be glad to undertake this work as an amendment of our agreement of February 8, 1965 covering the Supplementary Report of July 1965, and our original contract of October 10, 1963. No new agreement would be required on our part. If the scope of the work outlined herein and the terms given above are correct and approved by the Department, your written acceptance of this proposal is all that we need.

Unless the scope of work is changed, we expect to complete it by April 1, 1966 provided that we are authorized to proceed before the end of December.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

MNQ:Y

RECEIVED
DEC 7 1965
OFFICE OF
STATE HIGHWAY ENGINEER

Copy for R. L. Porter

MEMORANDUM

TO: Files

DATE: December 3,1965

FROM: M. N. Quade

JOB NO.

SUBJECT: Fremont Bridge, Portland, Oregon - Conversation with Mr. E. L. Erickson

With Mr. R. L. Porter's permission I called Mr. E. L. Erickson, Chief, Bridge Division of the Bureau of Public Roads in Washington with regard to some items for further studies of the Fremont Bridge that he had listed in his memorandum of November 16, 1965 to Mr. B. M. French, BPR Regional Engineer in Portland. The following agreement was reached:

1) With regard to Item 4, use of 60,000 p.s.i. yield steel, Mr. Erickson pointed out that this steel is available only in thickness up to 1" and that welding is therefore not practicable for shop fabrication. Therefore, in our future studies, use of this steel will be based on riveted members for both shop and field connections.

2) Item 6 - I told Mr. Erickson that it was extremely doubtful that a design that would would place the tie girder at the lower deck rather than the upper deck would result in any measureable economy in steel or cost; that we had two basic reasons for choosing the upper deck. The first being that the center span was already a little bit too long for normal economy and layouts and that tying this span at the lower deck would increase the length by an objectionable amount and (2) that it was possible that if the tie is placed on the lower deck, the development of the truss connections at this point might result in an encroachment on navigation clearances.

Mr. Erickson considered this objection valid and said that if we would discuss it in our report, there would be no need for any exhaustive investigation or analysis of the relative cost. (3) with respect to Item 7, I told Mr. Erickson that Design S-1B was sent to him inadvertently because it happened to be on the same sheet as S-1A; that our engineers and architects are in unanimous agreement that this design is the least attractive of the three designs S-1, S-1A and S-1B. I also told him that this design simply meant the replacement of the orthotropic girder with the Warren stiffening truss and that this did not remove some of the basic objections to the S-1 design with respect to flexibility and the problems of erection and jacking the component parts of the span for closure. I also stated that the whole object of the further studies is to see if the cost can be reduced to a level that is acceptable to the BPR and the Oregon State Highway Department, and that if Design S-1A can not do it, there is no chance that S-1B can effect a greater reduction in cost. Mr. Erickson accepted this and said that no detailed investigations would be required if these considerations are discussed in the report.

Our proposal to Mr. Porter will be predicated on the elimination of Items 6 and 7.

M. N. Quade

MNQ:Y
cc: Mr. R. L. Porter, Deputy State Highway Engineer.

RECEIVED
DEC 6 1965
OFFICE OF
STATE HIGHWAY ENGINEER

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NOV 30 1965
FOR FILING

I-405-8(17)303

7276

November 29, 1965

AIRMAIL

Mr. H. H. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York, N. Y. 10006

Dear Mr. Quade:

In line with our telephone conversation this morning, enclosed is a copy of a letter from the Bureau of Public Roads which suggests seven items for further study in connection with the proposed Fremont Bridge in Portland (Oregon Project I-405-8(1)301.)

What is desired under Item 1 would be data to justify the width in your July 1, 1965, report rather than the bare Bureau of Public Roads minimum. This apparently is the reason that it was not considered necessary to apply the narrower width to the other designs. Under Item 3, we believe what is suggested is Design S1-A that was attached to your April 15, 1965, letter.

It is requested that you furnish us with an approximate estimate of cost for performing these further studies so that we, in turn, can request concurrence from the Bureau of Public Roads. For your information in connection with Item 1, there is also attached a copy of Bureau of Public Roads Instructional Memorandum 40-1-65 which has to do with Interstate bridge widths. You will note that Figure 4, Case 4, is on the next to the last sheet.

If satisfactory with you, this additional work can be handled by exchange of letters rather than entering into another supplemental agreement.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

Copy to Moreland 11/30/65

RLP:ms
encs.

cc Forrest Cooper
Tom Edwards
Victor D. Wolfe

Form CD-121 (11-63) (Prec. by A.O. 204-10)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

477 Cottage Street NE.
Salem, Oregon

DATE: November 19, 1965

In reply refer to: 08-356

TO : Mr. Forrest Cooper, State Highway Engr.
Salem, Oregon

FROM : R. W. Harsons, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(1)301
Fremont Bridge

Attached hereto is one copy of our Washington office memorandum dated November 16, 1965, containing Mr. Erickson's comments on the stiffened tied arch design as the result of recent meetings he had with you and Mr. Quade.

Your attention is called to the last suggestion that you have your consultant study as many of the seven listed items as you find acceptable and prepare a revised cost estimate.

Attachments

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NOV 22 1965
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

November 16, 1965

Mr. D. M. French, Regional Engineer
Portland, Oregon

32-42

G. M. Williams, Director of Engineering and Operations
By: E. L. Erickson, Chief, Bridge Division, Washington, D.C.
E. L. ERICKSON

Oregon Project I-405-8(1)301, Freemont Bridge, Portland

Mr. Forrest Cooper, State Highway Engineer, arranged a meeting between the consultant, represented by Mr. Quade, and Mr. Erickson for the primary purpose of discussing ways and means of reducing the cost of the stiffened tied arch design, designated Design S1 in the consultant's Supplementary Report. The meeting took place in Washington, D.C., on November 12, 1965, and the following items were discussed.

1. Reduce the roadway width to conform to the minimum requirement for Interstate construction, as shown in Figure 4, Case 4 in Instructional Memorandum 40-1-65 dated September 9, 1965. This would result in a 6-foot reduction in the overall width of each deck. Such reduction in width is considered appropriate in view of the costlier type structure desired by the city of Portland. get all BPR will allow.

2. Reduce the length of the main span as much as practicable. This could result in some change in appearance because, in order to maintain vertical navigation clearance at the corners of the clearance diagram, the shape of the arch would change. It is suggested that the effect of a 100-foot reduction in span length be investigated. Consider

3. Introduce diagonals between the two decks at the ends. This would change the appearance somewhat but would simplify erection problems and reduce costs. Check

4. Reexamine the use of different steels and consider using A36, A440 and the new 60,000 yield strength steel for riveted members. OK

5. Consider using A441 steel for orthotropic deck plate and eliminate galvanizing. OK

6. Study effect on economy of placing tie at the level of the lower deck. OK stud

7. Study effect on economy of using a Warren Truss for the tie, supporting roadways from top and bottom chord levels. No objection

more

It is suggested that the State request its consultant to study all, or as many of the above 7 items as it finds acceptable and prepare revised cost estimate.

Mr. Quade expressed concern about the effect of deflection on the quantities of steel required for Design S1. This was not considered in the rough design on which the report quantities were based.

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NOV 9 - 1965
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DU PONT
ESTABLISHED 1802

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED

WILMINGTON, DELAWARE 19898

PLASTICS DEPARTMENT

PR 41000
AC 302
Bettlows Vs. Wyman 9-3462

October 15, 1965

T-405-8(17) 303
7276

Sp.

Mr. Forrest Cooper
State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310

Dear Mr. Cooper:

Attached is a sample of Polymer "W" wearing surface along with information on the properties and tests we have made on it. Mr. Quade requested that this be sent to you. I have also attached a copy of my letter to him answering several other questions he asked.

We would be very happy to have you visit us with Mr. Quade to see the test strip we have put down and answer any other questions you might want to ask. We would also like to have your opinions and suggestions.

Very truly yours,

C. A. Beddow, Jr.
Consulting Architect

CABmwp

Enclosures

RECEIVED
OCT 25 1965
OFFICE OF
STATE HIGHWAY ENGINEER

Sample to Porter
10-25-65

NOTED
FORREST COOPER

Z-156 REV. 9-63

DUPONT

ESTABLISHED 1802

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
WILMINGTON, DELAWARE 19898

PLASTICS DEPARTMENT

October 15, 1965

Mr. M. N. Quade
Parsons, Brinckerhoff, Quade and Douglas
Engineers
165 Broadway
New York, New York 10006

Dear Mr. Quade:

In reply to your letter dated October 6, concerning the sample of Polymer "W" wearing surface, which I sent to Tony Mavis, I will send Mr. Cooper a sample of the material and a copy of the property information and test data that we sent to you. I will also send him a copy of this letter.

Right now we cannot give a full and specific answer to your question because we are still working on the system. However, I will answer them as best I can.

Dorfter

1. We expect right now that the cost of preparing the steel plate, the Polymer "W" and the laminating of the Polymer "W" to the plate ready for use will cost between $2.00 and $2.50 per square foot. The cost of the steel plate and installing it is not included in this figure.

2. We are giving the steel plate a light sand blast to remove the scale because we have found that unless this is done, we get erosion of the steel at the edge when it is subject to the salt spray test.

3. We have developed an adhesive system which we use to laminate the Polymer "W" sheet to the steel, and we have found it exceptionally strong.

4. The material can be bonded to the steel at temperatures between 70° and 200°F.

5. As the material itself is in sheet form, it is made to a very close tolerance and will deflect with the steel plate.

6. Right now, from the work we have done, we find that the material will come and go with the steel so only the coefficient of expansion of the steel need be considered.

We have run wear tests on the material using a small loaded wheel which we believe would be in proportion to the loading of an H-20 truck.

There are several test strips at our Experimental Station which have been down for over six months, which I am sure would be of interest to you. We would like very much to have you come down to look at them and at that time, I am sure that we could answer your questions in more detail. We would also like your opinions and suggestions on other requirements that this material would have to meet.

If you will drop me a note, I will arrange a date. If you would like to bring anyone with you, please do not hesitate to do so.

Very truly yours,

C. A. Beddow, Jr.
Consulting Architect

CABmwp

cc: Mr. Forrest Cooper

RECEIVED
OCT 19 1965
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
OCT 19 1965
OREGON
STATE HIGHWAY COMMISSION

TABLE I

POLYMER W - GENERAL PROPERTIES

Property	Units	Method	Temp.	Typical Value
Tensile Strength	psi	D-412	-50°F 73°F 158°F	6,000 4,000 1,500
Stress at Yield	psi	D-412	73°F	3,000
Elongation	%	D-412	-50°F 73°F 158°F	100 200 350
Stiffness	psi	D-747	73°F	70,000
Hardness Shore Rockwell	- -	D-676 D-785	73°F 73°F	D-67 R-83
Impact Strength Izod, Notched	ft.lbs/ inch of Notch	D-256	-40°F 73°F	4 No break
Deformation under Load 2000 psi, 24 hrs	%	D-621	122°F	15
Low Temp. Brittleness	°C	D-746	--	-80
Zero Strength Temp. Weight of 1/4" Sheet	°C lbs/sq ft	-- --	-- --	300 1.6
Coefficient of Thermal Expansion	in./in. per °C	D-696	RT to 100°C	25×10^{-5}
Coefficient of Thermal Conductivity	cal/cm-sec °C	C-177	50° mean 70 lb press.	9.1×10^{-4}
Specific Heat	cal/°C/ gram	--	50° mean 70 lb press.	0.56
Burning Rate (1/4" Thick)	in./min	D-635	--	0.4
Oil Resistance	--	D-734	4 hrs in SAE 20 motor oil @ 70°C	Little effect

DLF/etk
1/8/65

TABLE II

POLYMER W WEAR RESISTANCE

Method A: Taber Abraser ASTM D-1044-56
1000 gm load

with CS-17 Wheels[1]	.0034g/1000 cycles
with H-22 Wheels[1]	.050g/1000 cycles[2]

Method B: 20 mil tapes 4" and 6" wide put across lane of traffic. After 300,000 vehicles the tapes showed no sign of wear.

(1) Wheels resurfaced every 250 cycles

(2) Asphalt concrete gave rate of 2.44 g/500 cycles

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TABLE III

POLYMER W - COEFFICIENT OF FRICTION AGAINST RUBBER* USING THE FRICTIONOMETER

Velocity cm/sec		μ Dry	μ Wet	μ Oil + Water
Static		.85	.79	.21
25		1.52	1.84	.35
50	Ascending	1.56	1.76	.37
100		1.64	1.48	.24
150		2.16	1.32	.24
100	Descending	2.16	1.44	.24
50		2.12	1.64	.26
25		2.12	1.80	.29
Static		0.94	0.76	.28

*Tire tread rubber, no grit on surface of Polymer W

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TABLE IV

POLYMER W - COEFFICIENT OF FRICTION AGAINST RUBBER*

Procedure

ASTM D-1894 sliding sled 20"/min, 200 gm load

Material	μ Kinetic Dry	Kinetic Wet	Static Dry	Static Wet
Polymer W	0.96	1.32	1.07	1.14
Portland Cement Concrete	1.27	0.96	1.11	0.91

*Tire Tread Rubber, no grit on surface of Polymer W

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TABLE V

POLYMER W - CHEMICAL AND SOLVENT RESISTANCE*

Reagent	Initial Thickness (inches)	% Increase in: Weight	Length	Width	Thickness
3% H_2SO_4	.130	-.04	Nil	Nil	Nil
30% H_2SO_4	.125	-.10	Nil	Nil	<1
1% NaOH	.129	.04	Nil	Nil	Nil
10% NaOH	.127	.02	Nil	Nil	<1
10% NaCl	.127	<.01	Nil	Nil	Nil
5% Phenol Solution	.129	.16	Nil	Nil	Nil
5% Acetic Acid	.127	.49	Nil	Nil	.78
10% Ammonium Hydroxide	.124	.21	Nil	Nil	Nil
50% Ethanol	.130	.30	Nil	Nil	<1
95% Ethanol	.127	.39	Nil	Nil	<1
Acetone	.127	1.09	Nil	Nil	<1
Ethyl Acetate	.128	2.75	1	1	1.2
Ethylene Dichloride	.126	6.14	2	2	2.4
Carbon Tetrachloride	.127	32.0	5.5	7.5	9.5
Toluene	.128	13.3	5	3.5	9.0
Heptane	.126	9.7	4.7	6.0	5.8

*ASTM D-543 1" x 3" x 1/8" bars

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TABLE VI

PROPERTIES OF POLYMER W - STEEL COMPOSITES

1/4" Polymer W on Steel (1/4" or 3/8")

Property	Method	Temp.	Typical Values and Remarks
Bond Strength	Shear at 2"/min	73°F	>600 psi
Freeze/Thaw	Cycling	+40°F to -40°F	Survives multiple cycles
Flexing	.15" deflection for an 18" span	73°F	OK after 13,000 cycles
Salt Fog Resistance	ASTM B-117	95°F	1/16" penetration/ 30 days
Burning Rate	ASTM D-635	--	Nonburning
Resistance to Shoving	1/2" ball pressed into 1/4" Polymer W on Steel	195°F	1270 psi stress at .025" indentation (50 lb force)
	1/2" ball pressed into 1/4" Polymer W bridging across 3/4" gap	195°F	485 psi stress at .025" indentation (19 lb force)

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TABLE VII

POLYMER W WEARING SURFACE-E.S. TEST INSTALLATION

Concrete Pad

10 ft x 40 ft in one lane

8 inch thick mesh reinforced concrete of min 2500 psi compression strength

Regular hand finish for roadway

Plates

2 ft x 8 ft

1/4" Polymer W on 1/8" Steel

Four plates in each tire track

Anchoring

Plates anchored at ends.

Four expansion shield bolts (Star DBLE 7025 3/4 hold) for each end. Some of the bolts went through both the steel and the Polymer W, other only went through the steel.

Stopping Distance (smooth tires with wheels locked)

	At 10 MPH		At ~20 MPH
Surface	Dry	Wet	Dry
Polymer W(1)	8	12	18-19
Concrete	6(2)	7 3/4	18(3)
Rough Bituminous	7	11 1/2	--

(1) No grit
(2) Agrees with Extrapolated Literature Value
(3) Literature Value

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1/8/65

E. I. DU PONT DE NEMOURS & COMPANY

NOTE: IN PREPARING USE ONLY TYPEWRITER, INDELIBLE OR BALL POINT PEN.

ISSUED BY: C. A. Beddow, Jr.
NAME OF PLANT OR OFFICE

DATE ISSUED: 10/15/65

SUPPLYING DEPARTMENT: Plastics

CHARGE: CUSTOMER'S NAME OR GENERAL LEDGER ACCOUNT

CUSTOMER'S ADDRESS OR G. L. SUB-ACCOUNT

ROUTING: P.P.S.D. EL

F. O. B. CHESTNUT RUN LOCATION

SHIP VIA: CENTRE ROAD

WILMINGTON, DELAWARE
DESTINATION IF DIFFERENT FROM ABOVE

ORIGINAL	
ALTERATION	
PARTIAL SHIPMENT	

INVOICE REFERENCE

SHIPPING PRIORITY NO. RMF 62694

AGENCY OR ACCOUNT NO.

SHIP TO: Mr. Forrest Cooper
State Highway Department
DEST. Oregon State Highway Department
Salem, Oregon 97310
COUNTY STATE

TERMS

CUSTOMER'S ORDER NO.

DATE SHIPPED	B/L NO.	B/L WEIGHT	CAR & INITIAL NO.
10-20-65			

FREIGHT RATE	PREPAID FREIGHT	INDUSTRY	DISTRICT	SALESMAN

DESCRIPTION OF ARTICLES	BILLING QUANTITY	PRICE	AMOUNT
Polymer "W" wearing surface			
Table of information			
Letter enclosed			

106

RUSH

MUST REACH DESTINATION BY: 10/25/65

APPROX. VALUE OF MATERIAL: $

CHARGE TRANSPORTATION TO: Design Group 8315 21-524
DEPT. LEDGER ACCT.

MATERIAL TO BE / NOT TO BE RETURNED

SPECIAL INSTRUCTIONS: FLAMMABLE ☐ VOLATILE ☐ KEEP FROM FREEZING ☐ OTHER

COPY OF INVOICE OR J. S. T. TO

Shipment Authorized By: A. L. Pope

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CENTRAL SHIPPING
Chestnut Run Lab.

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SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N.Y. 10006
TELEPHONE BEEKMAN 3-6300

October 6, 1965

E. I. duPont deNemours & Company, Inc.
Plastics Department
Wilmington, Delaware 19898.

Attention: Mr. C. A. Beddow, Jr.
Consulting Architect.

Gentlemen:

The sample of and data pertaining to polymer "y" wearing surface for orthotropic bridges that Mr. C. A. Beddow, Jr. sent to our Mr. A. H. Mavis on September 10th has come to my attention and I am interested in this material.

Because of the possibility of using orthotropic design on a proposed bridge in the State of Oregon, I have shown the sample of the material which you sent to us to officials of the Oregon State Highway Department and have given them a copy of the physical data which you sent to us. It would be appreciated if you would send a sample like ours to:

Mr. Forrest Cooper, State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310.

Other than the obvious question concerning the life of the material in use, which can be finally demonstrated only by an actual installation, we have several questions in regard to this material:

1) What is the expected cost in place per unit of area of deck surface?

2) Does the steel have to be specially treated or cleaned in order to apply the wearing surface?

3) How is it bonded to the steel?

4) Is it applied hot or cold?

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NOTED
R. L PORTER

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FORREST COOPER

5) How is it finished to a true surface?

6) We note that there is a considerable difference in the coefficient of expansion in the wearing surface and steel. What would be the effect of this on a bridge exceeding say 1,000-ft. in length?

I would presume that the wearing characteristics of the material under traffic could be tested by running rubber-tired wheels carrying a wheel load equal to an H-20 truck in a circular path over a long period of time. This would, of course, be conducted in the laboratory but it would be indicative of the behavior of the material under many applications of a heavy truck wheel. Has such a test been made?

Any answers to the above questions that you can give Mr. Cooper and me would be greatly appreciated.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

H. N. Quade

HNQ:Y

cc: Mr. Forrest Cooper

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JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

Sp.

October 1,1965

Mr. Forrest Cooper
c/o Hotel Commodore
Pershing Square
New York,N.Y.

Dear Mr. Cooper:

I am glad to learn from your letter of September 28,1965 that you have traveled over the George P. Coleman Bridge at Yorktown and the Mackinac Bridge in Michigan.

Since I will be in the office on Monday, October 4th, beginning at 8:30 A.M. it would be appreciated if you would call me at the office on that morning since it will probably be much easier for you to reach me than it would be for me to locate you at the Hotel.

Ordinarily Monday, October 4th would be a good date to spend a little time looking at some open grating installations in New York if it were not for one thing. The Pope is visiting New York on that day. Although we have been without newspapers because of a strike for the past week and do not know much about the details of his visit, I suspect that the traffic situation will be such that it will be extremely difficult to get around on that date. If you have experienced traffic jams in New York due to parades, you will know what the problem is. It would be much better to make it any time on Tuesday, October 5th or Wednesday afternoon, the 6th or any time on Friday if you are still going to be here, but if October 4th is the only day that you will be free, we will manage it somehow. If you will be so good as to call me on Monday morning I would appreciate it very much.

I have made arrangements to attend the meeting in Portland on October 14th as requested by Mr. Porter and will look forward to seeing you then as well as next week.

Sincerely yours,

M. N. Quade

MNQ:Y

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FORREST COOPER

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September 28, 1965

AIRMAIL

Mr. M. H. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York, N. Y. 10006

Dear Mr. Quade:

Thank you for your letter of September 23 in which you discuss the subject of open grating bridge decks.

I have traveled over both the George P. Coleman Bridge at Yorktown and the Mackinac Bridge in Michigan. I was over the Yorktown bridge quite recently and do not recall that the deck caused any unpleasant sensations.

It was very kind of you to offer to show me bridges in the New York area and I am sure that I can find time to take advantage of your offer. Saturday and Sunday, October 2 and 3, are out, as I will be tied up with all-day meetings. I will also eliminate October 7, as you will be busy on that date. In viewing my schedule of activities, it would appear that the afternoon of Monday, October 4, would be the best; however, I will confer with you after reaching New York.

Sincerely yours,

Forrest Cooper
State Highway Engineer

FC:fm

cc R. L. Porter
Tom Edwards
Victor D. Wolfe

P. S. I will be staying at the Commodore Hotel

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R. L. PORTER

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September 23, 1965

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

Mr. Forrest Cooper, State Highway Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310.

Mr. R. L. Porter, Deputy State Highway Engineer
Orogon State Highway Department
State Highway Building
Salem, Oregon 97310.

Re: Inspection of Open Steel Grating Installations.

NOTED
FORREST COOPER

Gentlemen:

During our telephone conversation of approximately ten days ago you stated that you would like to inspect some installations of open steel grating on bridge decks while you are in New York during the week of October 4th for the AASHO meeting.

The installations which we would like you to see are, unfortunately, rather remote from New York. Of particular interest would be the deck on the two 500-ft. swing spans for the George P. Coleman Bridge at Yorktown, Virginia. This is one of our projects in which we take considerable pride. Another interesting installation would be the Mackinac Bridge in Michigan, where the two inner lanes are steel open grating and the two outside lanes are concrete. This is not, however, our job. The third installation, remote from New York, is the Ogdensburg Bridge across the St. Lawrence at Ogdensburg, New York.

However, it is not likely that you would want to spend the time to go to these more distant points so I will confine the remainder of my suggestions to installations in the New York City area - where there are four or five bridges that will be worth looking at.

The best and most accessible one is the bridge which carries Broadway over the Harlem River at the north end of Manhattan Island. It is a vertical lift span which carries six lanes of vehicular traffic on the lower deck and two tracks of the "subway" on the upper deck. This is a

1956 80TH ANNIVERSARY

Copy to Edwards
9-27-65

good and recent installation of steel "I-Beams-Lok." A similar installation occurs on the bridge to Welfare Island from Queens, but I have not seen this. I have been told that the I-Beam grating also occurs on the Third Avenue Bridge and on the Manhattan Bridge between Brooklyn and Manhattan - both of which are alteration jobs which replace other types of decking. It is not likely that the alteration jobs can be accomplished with the same degree of perfection in installation as the new decks on the Broadway and Welfare Island bridges.

A different type of grating, the Irving grating, is installed on the Marine Parkway Bridge which is in Brooklyn. You might like to see these as well. However, my own preference is the I-Beams-Lok grating, which is manufactured by the U. S. Steel Corporation, and also by Reliance.

We would be pleased and honored if you would permit us to arrange for transportation and accompany you on any inspection trips that you would like to make and have time for during the AASHO meeting. October 7th would not be good for me since I have an all-day committee meeting in New York on that date. However, the 4th, 5th or 6th would be all right insofar as I know at the present time.

FC
See attached schedule

It occurs to me, however, that you may be arriving in New York on either Saturday, October 2nd, or Sunday, October 3rd. In that case I would be only too happy to drive into New York on either Saturday or Sunday afternoon, pick you up at your hotel, and make a tour of as many bridges in the area as you would like to see. Since these bridges are all lighted, it would be possible to do it in the evening as well as in the afternoon. Similar arrangements for transportation could also be made for any other day in the week except October 7th.

Please let me know what time would suit your convenience and where you will be staying in New York during the AASHO meeting.

With best regards, I am

Sincerely yours,

M. N. Quade

MNQ:Y

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September 28, 1965

AIRMAIL

Mr. M. H. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York, New York 10006

Dear Mr. Quade:

As a followup to our telephonic conversation of Monday, September 27, this is to confirm a meeting relative to the Fremont Bridge in Portland on October 14 at 10 a.m. The Oregon Highway Commission will meet with Mr. William Bowes, Commissioner of Public Works of the City of Portland. Several staff members of the Highway Commission and of the City of Portland will be present and I also anticipate that representatives of the Bureau of Public Roads will be in attendance.

The meeting will be held in the Portland office of Mr. Glenn L. Jackson, Chairman of the Highway Commission, on the fifteenth floor of the Public Service Building. The Public Service Building is directly across 6th Avenue from the Hilton Hotel in Portland.

We are glad that you will be able to meet with us on October 14.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms

cc Mr. Forrest Cooper
Mr. Tom Edwards
Mr. Victor D. Wolfe

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dp

August 24, 1965

Mr. Stan Federman
The Oregonian
1320 S. W. Broadway
Portland, Oregon

Dear Mr. Federman:

As requested there are enclosed elevation sketches of three designs recently estimated by Parsons, Brinckerhoff, Quade & Douglas for possible consideration for the Fremont Bridge. This is in line with a recommendation from the City of Portland that consideration be given to a structure similar to the one recently completed in British Columbia at Port Mann. The Port Mann type of structure is designated as design S-1.

Because of considerable local interest, the consulting firm was also asked to estimate a full span conventional suspension bridge, which is designated as design S-2. They were also asked to estimate a cantilever without piers in the river. It is generally conceded that this is the most economical structure for this situation.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms
enc.
cc/enc. Mr. Painter - The Oregonian

cc Mr. Forrest Cooper
Mr. Victor D. Wolfe

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Mr. B. M. French
Regional Engineer
Portland, Oregon

August 17, 1965

32-42

G. M. Williams, Director of Engineering and Operations
By:E.L. Erickson, Chief, Bridge Division, Washington, D.C.

E. L. ERICKSON

Oregon Project I-405-8(1)301
Fremont Bridge Supplemental Study

Receipt is acknowledged of your memorandum of August 12, the division engineer's memorandum of July 26 and a supplemental study of the above bridge prepared by Parsons, Brinckerhoff, Quade and Douglas.

The supplemental report has been broadened to include layouts and estimates for stiffened, tied arch with orthotropic upper deck, externally anchored suspension bridge and through cantilever truss all spanning the river from embankment to embankment.

The consultants' estimates indicate that the costs of the through cantilever truss (Design S3) and the previously prepared continuous tied arch (Design 6) are practically the same, however, we agree with the division engineer that the unit prices the consultants used for structural steel in truss bracing and floor system for the two designs do not seem to be realistic. It is possible that the unit costs should be reversed. We believe that the through cantilever truss would be the most economical of the two designs.

We concur in the consultants' conclusions and recommendations that the choice lies between Designs 6 and S3; the other designs, although pleasing in appearance, are out of reach as far as cost is concerned. We further concur in the consultants' recommendation that Design S3 be selected as the basis for final design development except that we prefer the straight bottom chord layout. (Alternate truss profile)

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R L PORTER

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Act	Info		Init
		Div Eng	
		Eng Coord	
		Dist Eng - A	
		Area A Eng	S
		Dist Eng - B	
		Area B Eng	
		Plan ...	
		Right of Way	
		Bridge Engr	I
		Admin Mgr	
		Maint	
		EA	
		File	

Form DOT-17F (11-63) (Prod. by A.O. 208-10)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

DATE: August 16, 1965

I-405-8(11)303 T.L.D.

In reply refer to: 08-35.6

FROM 7276 T. Dec, Assistant Division Engineer
Salem, Oregon

SUBJECT: SP

Oregon Project I 405-8(1)301
Fremont Bridge
Preliminary Engineering

We concur in the acceptance of the supplemental report on three additional designs previously furnished us as prepared by the consultant firm of Parsons, Brinckerhoff, Quade & Douglas on the Fremont Bridge as requested by Mr. Porter's August 9, 1965 letter.

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TOM EDWARDS

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BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

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August 11, 1965

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Oregon State Highway Commission

Gentlemen:

Under date of February 8, 1965, a supplemental agreement was entered into with the firm of Parsons, Brinckerhoff, Quade & Douglas to prepare three additional designs for the proposed Fremont Bridge in Portland. This was brought about by requests from various and diverse groups for the consideration of a cable-stayed tied arch similar to the one constructed over the Fraser River near Vancouver, British Columbia, and to the request from other interests for a suspension bridge that would span the full harbor width.

The firm has completed its work and has submitted its report. I call your attention to Table 6 on page 31 of the attached copy, in which construction estimates are tabulated for 10 different designs.

The report has been completed under the terms of the agreement and I recommend that you formally accept it at the August 23 Commission meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

Attachment

cc: Floyd Query
R. L. Porter
Tom Edwards
Victor D. Wolfe
Ivan D. Merchant
C. H. Maleen

RLP:ms bg

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Oregon State Highway Department
Salem, Oregon 97310

No. 778

Att: Mr. R. L. Porter
Deputy State Highway Engineer

TO

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

165 BROADWAY, NEW YORK 6, N. Y.

SP

August 3, 1965

FINAL INVOICE

For Engineering and Architectural Services in connection with the investigation of several types of structures for the main span of a proposed bridge over and across the Willamette River in Portland, Oregon in accordance with our agreement dated February 8, 1965.

Salaries of Staff - See Schedule "A" Attached		$ 3,505.48
Total Reimbursable Cost		$ 3,505.48
Lump Sum Fee	$ 18,500.00	
Total Previously Billed	5,256.96	
Lump Sum Portion To Be Billed		13,243.04
Add: Retained Fees Withheld		937.72
AMOUNT DUE		$ 17,686.24

I certify the charges contained in this bill are correct and have not been previously billed.

M. N. Quade

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SCHEDULE "A"

Salaries of Staff	Hours	Rate	Amount		
April 10 to May 7, 1965					
R. W. Newsam	2	7.25	$ 14.50		
M. E. Fiore	21	8.25	173.25		
J. Swindlehurst	138	4.75	655.50		
V. Sepcenko	158	5.00	790.00		
J. P. Connolly	5	2.25	11.25		
A. Klausman	4	5.00	20.00	$	1,664.50
May 8 to June 4, 1965					
R. W. Newsam	1	7.25	7.25		
M. E. Fiore	9	8.25	74.25		
J. Swindlehurst	79	4.75	375.25		
G. Vaccaro	3	7.25	21.75		
V. Sepcenko	40	5.00	200.00		
S. Steuerman	2	5.80	11.60		690.10
June 5 to July 2, 1965					
R. P. Caponi	4	4.45	17.80		
A. J. Gudaitis	23	4.40	101.20		
R. L. Mariano	3	3.25	9.75		
R. W. Newsam	2	7.50	15.00		
M. E. Fiore	8	8.25	66.00		
J. Swindlehurst	113	4.75	536.75		
G. Vaccaro	1	7.25	7.25		
V. Sepcenko	13	5.00	65.00		818.75
July 3 to July 16, 1965					
R. H. Arents	13 1/2	3.75	50.63		
M. E. Fiore	6	8.25	49.50		
M. C. Shedd	10	6.25	62.50		
S. Sherman	10	3.10	31.00		
J. Swindlehurst	26	4.75	123.50		
G. Vaccaro	2	7.50	15.00		332.13
				$	3,505.48

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EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

July 30, 1965

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310.

Re: Fremont Bridge -
Portland, Oregon.

Dear Mr. Porter:

We are grateful to you for your letter of July 23, 1965 pertaining to our Supplemental Report on Alternate Designs for the Fremont Bridge. If you would like me to attend any meetings with the Bureau of Public Roads or the City of Portland or both, I will be glad to do so at no further expense to the Department, of course. In the meantime, we will prepare our invoice and will be submitting it as soon as we have determined all of our costs.

With regard to the last paragraph of your letter, we would like very much to be of further assistance to the Department, in connection with this bridge, and the preparation of contract plans and specifications for it. Whenever a decision has been made as to the type of bridge that will be constructed and whenever it is convenient for you to discuss our further services, we will be glad to come to Salem for that purpose. This trip, of course, would be in addition to the trip referred to above in case you should wish us to participate in the discussions with the Bureau or the City in regard to the selection of the design.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

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July 23, 1965

Mr. H. H. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York, N. Y. 10006

Dear Mr. Quade:

This is to acknowledge receipt of your July 14 letter with three copies of the report on the supplemental alternate designs for the Fremont Bridge; 47 copies of the report by air express; and your two lectures of July 19 having to do with the Sander system and open steel grate decks on some of the spans.

We are in the process of discussing the report with the Federal Bureau of Public Roads and as soon as some mutual understanding can be reached, a meeting will be planned with the City of Portland. We appreciate your offer to meet with us and will try to give you as much advance notice as possible if your attendance is needed.

I have reviewed the material you have submitted and will ask Mr. Cooper to recommend to the Highway Commission that your report be accepted. This will be at the next regularly scheduled Highway Commission meeting on August 24. In the meantime, if you will submit to us your billing on this service, we will place it in line for payment as promptly as possible.

While I cannot offer any official commitment, it is the desire of this Department that you undertake the preparation of detailed plans and specifications when an agreement between the City of Portland, the Bureau of Public Roads, and the State is reached. We hope that you will be able to accept the assignment. We will let you know just as promptly as possible but anticipate that negotiations, with the City in particular, may take some little time.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

cc Forrest Cooper
Tom Edwards
Victor D. Wolfe
I. D. Merchant

RLP:ms

July 22, 1965

Mr. A. V. Parsons, Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon

Dear Mr. Parsons:

Re: Fremont Bridge Designs

Attached are copies of two letters dated July 19 from Parsons, Brinckerhoff, Quade & Douglas that have to do with the consideration of open steel grating for a deck on some of the structures and further comments on a fender system for spans having main piers in the river.

These are supplementary to the report submitted to you on July 19.

I again urge that we arrange for a mutually satisfactory time to discuss this matter as soon as possible.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms
Att. (trip.)
cc Mr. Forrest Cooper
cc/att Mr. Tom Edwards
" Mr. I. s. Marchant
cc Mr. Victor D. Wolfe

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EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

July 19, 1965

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310.

Re: Fremont Bridge, Portland, Oregon.
Reduction in Cost Through Use of
Steel Open Grating.

Dear Mr. Porter:

In our 1964 and 1965 Reports on Studies of Alternate Designs for the Fremont Bridge at Portland we have stated that the use of open steel grating for the lower deck of the main span (between main piers) would result in a significant saving in cost. This statement does not, of course, apply to Designs 5 and 7 where both the upper and lower decks must be of orthotropic construction.

We have not nor do we now recommend open grating for the upper deck or for the lower deck where the spans are entirely over land primarily because of the danger to persons and vehicles below from objects that would fall through the openings in a steel grating.

Open steel grating is commonly used in movable and long span bridges and has proved to be quite satisfactory even in locations which are exposed to all kinds of weather including sleet, snow and ice. Since the grating would be beneath the protection afforded by the upper deck on the Fremont Bridge, it would seldom become wet. It is our observation that existing installations of open steel grating on the bridges in Portland are not representative of the type of grating or the quality of the installation with respect to alignment that can be used on the Fremont Bridge.

In accordance with your request, we have made an investigation of the saving in cost which could be achieved by the use of open steel grating in place of a reinforced concrete slab for the lower deck between main piers. Although the grating itself is more expensive than the concrete deck and although it requires more steel in the floorsystem because of the

larger number of stringers needed to support it, this additional cost is more than offset by the reduction in the weight of steel in the trusses of the suspended span, the cantilever arms, and the anchor arms. There is also some saving in the cost of the main piers.

We find that the reduction in the cost of Design 1 through such use of open steel grating is $100,000. There would be about the same reduction in cost in Designs 2, 3 and 4.

Ordinarily, it would be expected that the saving in cost in Design S-3 would be several times that of Design 1 because of the large increase (500 feet) in the length of the main span. However, we have found that the long panel length (48 feet) of Design S-3 and the effective use of composite design for the stringers in both decks has resulted in a relative reduction of the saving in cost due to the use of open grating because the increase in the weight of the steel in the floorsystem is proportionately greater.

We find the saving in cost through such use of open grating in Design S-3 to be $200,000. The saving in cost for Designs S-1 and S-2 would probably be somewhat larger.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

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165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

July 19, 1965

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310.

Re: Fremont Bridge, Portland, Oregnn.
Fender System for 650-foot Main
Spans Having Main Piers in River.

Dear Mr. Porter:

In response to your request we are submitting herein the results of a preliminary study of the fenders that would be required for the effective protection of the main piers of the Fremont Bridge (and the ships as well) in those designs (Designs 1 through 5) which have piers in the river. In our Report of August 1964 (See page 8) as well as in our Supplementary Report of July 1965, we stated that we believe that much heavier fenders than the timber facing on the pier shafts that is shown in the permit drawings and that became a design criteria for our 1964 report would be required.

Since both sides of the river are lined with berthing facilities at and adjacent to the proposed bridge many large ships will pass under the side spans and close to the main piers in order to dock. Each side span will provide a horizontal clearance of only 150 feet, a very limited space for the docking maneuvers of large ships. Therefor, the fender system at each main pier should extend around the entire perimeter in order to protect the pier from ships approaching the piers from an upstream and downstream direction and in the side spans as well as in the main channel. This is in contrast to the protection system shown only on the channel sides of the piers on the Navigation Permit Application drawings.

The most effective protection in a situation such as this is a structure which is completely independent of the pier, and which is capable of absorbing the impact of a moving vessel by itself. However, at this site, the clearance requirements for sidespan channels, in addition to that in

the main channel, allows an overall longitudinal dimension for each main pier of only 26 feet-4-3/4". Since the main piers will require a pedestal approximately 22 feet wide, the thickness available for a fendering system will be only a little over 2 feet-2" on either side of each pier.

A further complication is the depth of water: approximately 38 feet at low water to as much as 68 feet at flood stage. This great depth would make an independent system constructed within the limitations for clearance very flexible and would make it extremely difficult and costly to design a structure which could resist, by itself, the impact of a moving vessel.

Obviously, there is insufficient space at this site to provide independent fender systems for the river piers. The only alternative is to attach a portion of the fender system directly to the piers, as shown in Sketch SK-1 which is enclosed. Even with this arrangement, the limited longitudinal dimension permits the fendering attached to the pier faces to consist of only two layers of timber plus sheathing. Unlike a flexible, independent fender system which will dissipate most of the dynamic force, the pier will not yield and therefore will have to sustain the full impact due to collision. With large vessels, even when moving a moderate velocity, this force could be tremendous and could result in serious damage not only to the vessel, but also to the pier.

At the upstream and downstream ends, the fender should be extended beyond the ends of the pier pedestal, as shown on Sketch SK-1. Part of this extension can rest on and be anchored to the caisson concrete forming the pier base. The remainder of the extension can be formed of sheet piling driven into the river bottom thus providing much needed rounded ends upstream and downstream for protection. Because of the limited width and deep water, the configuration of the extension will be such that adequate bracing would be difficult to provide. This would inevitably leave this portion of the fender somewhat vulnerable to impact and require frequent maintenance.

In making these further studies of the fenders subsequent to the submission of our 1964 Report the need for providing as much resiliency between the pier face and the fender as is possible within the dimensional limitation imposed by the permit to build the bridge has become apparent. This particularly applies to the sections of the fenders that are attached directly to the east and west faces of the piers. The same consideration applies to the fenders shown on the permit drawings. To provide as much resiliency as possible it is proposed to use the detail shown on Sketch SK-2 which is enclosed. Note that the vertical timbers bolted directly to the piers are discontinuous to provide space for a 10" x 12" x 12" rubber cushion block which bears directly against the 10 x 12 timber horizontal wales to which vertical 3-inch timber sheathing is attached. As detailed,

the sheathing when struck by a ship would be able to move 4 inches under the yielding resistance of the rubber blocks before the face of the fender would bear against the pier shaft. This will cause a much greater cushioning effect than would be achieved by a rigid attachment to the face of the pier. The only possible cushioning with direct attachment would be provided only by the crushing of the timbers.

Not shown on Sketch SK-2 are the necessary details for restraining movement of the fender face and the horizontal wales in a direction parallel to the face of the pier. This, too, can be cushioned with rubber by means of timber lugs attached to the horizontal wales that bear against stops bolted to the piers.

To prevent early corrosion and to facilitate repairs following damage to the parts of the fenders which are attached to the pier faces, it is proposed that a threaded sleeve or coupling made of corrosion-resistant steel (such as Monel metal) be provided at the face of the pier for each bolt and set flush with the face of the concrete. All bolts projecting from the pier would engage the sleeve and would also be made of corrosion-resistant steel but the bolts embedded in the concrete would be made of ordinary carbon steel.

The details shown on Sketch SK-2 and described above would increase the costs of the fender system given in our 1964 Report since they were not contemplated at that time.

These further studies have shown that the differential cost of the fenders which are proposed herein and which are considered by us to be necessary, is somewhat greater than the amount of $350,000 which was stated in both of our prior reports as a minimum amount. The cost of the fenders as shown on Sketches SK-1 and SK-2 is estimated to be approximately $240,000 per pier or $480,000 for the entire bridge shown in Designs 1 through 5. This is a differential cost of $422,000 or, in round numbers, $425,000.

Considerable effort and thought have been employed on each of the designs to obtain a structure that is aesthetically pleasing. As stated on page 36 of our August 1964 Report, an adequate fender system, such as is shown on Sketch SK-1, would be so massive as to seriously detract from the appearance of any of the designs having piers in the river. This is especially true at low water, when an expanse of creosoted timber nearly 40 feet high and 180 feet long would be exposed to view.

It is known that ship operators are concerned about any obstacle in the water which would be dangerous to their operations. Despite all necessary

precautions and navigational aids in use today, accidents do occur. Such an unfortunate accident occurred in April of 1964 to Venezuela's General Rafael Urdaneta Bridge over Lake Maracaibo where two towers and three spans plummetted into the water when a tanker hit one of the piers. Heavy fender protection is required wherever bridge piers are exposed to the hazard of being struck by large ships even at the slow speeds that occur during docking.

With the current expansion of shipping, as well as an increase in size of ships, more space is required in ports. Some thought should, therefore, be given in the selection of the design as to whether it would, in the future, constitute a hazard to navigation and encumber the development and growth of the port. Since the present study includes designs which completely span the river, it would seem proper, in view of the above, to give favorable consideration to one of these designs.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

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Top of Concrete Pedestal El. +60

Top of Fender El. +40

H.W.

3×12 Solid Sheathing

℄ Pier

L.W. El.+3.22

Bottom of Fender El. -2

MP 112 Steel Sheeting both sides of pier.

Extend steel from follower cofferdam to El. +40 and leave in place.

Half-Cell of MP 112's

Top of Caisson

Bottom of River

HALF ELEVATION
1" = 20'

SECTION A-A
1" = 20'

A

3×12 Solid Timber Sheathing

Caisson & Follower Cofferdam

℄ Bridge

Steel Wales @ 4' o.c.

Timber Wales 10×12 @ 4' o.c.

Pier Shaft

22'

26'-2"

℄ Pier

R.12'

Timber Verts. @ 6' o.c.

Brace compartments & fill with rock

Embed Interlock in Pedestal

3×12 Solid Sheathing

Steel Wales

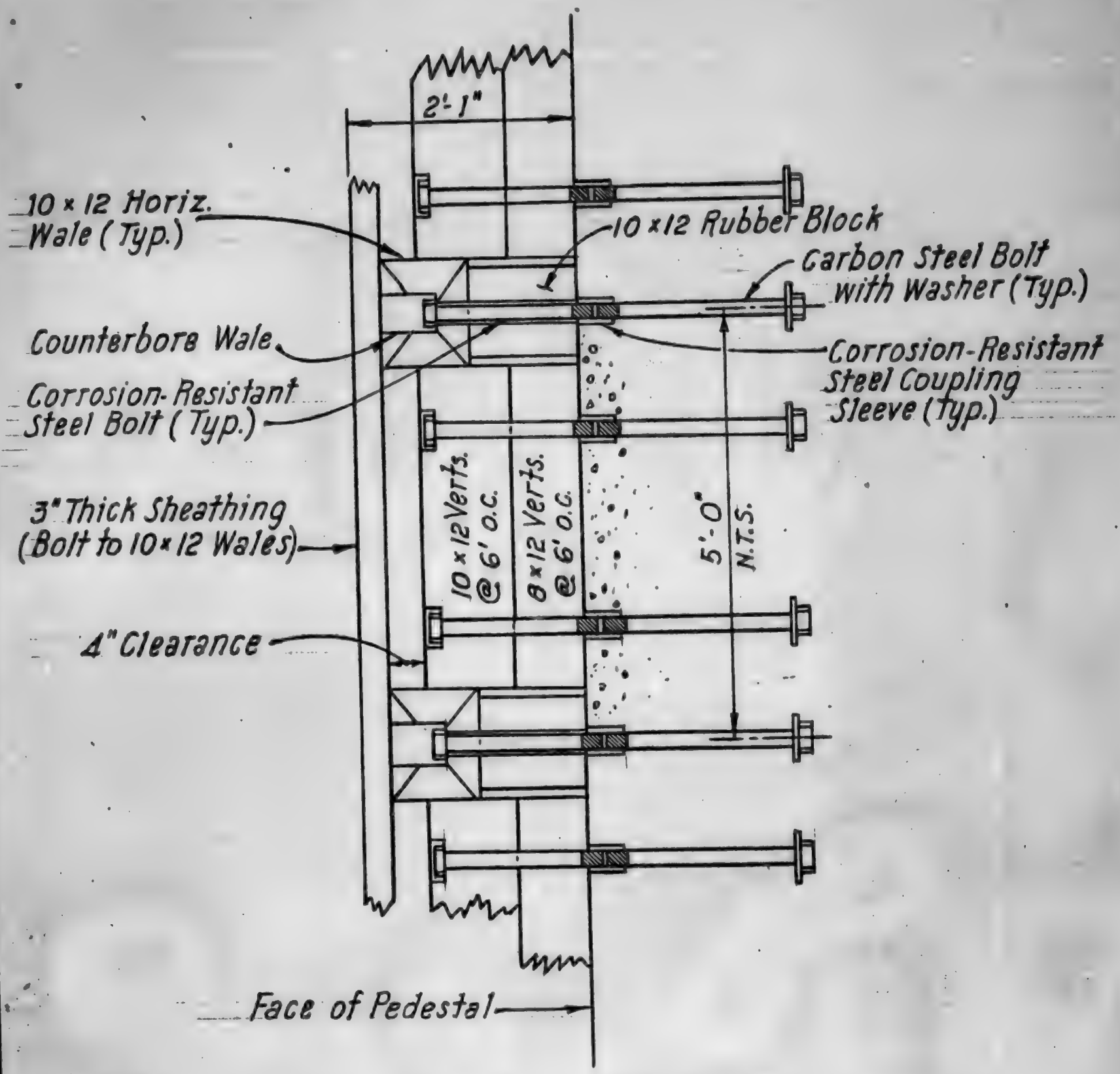
Timber Wales

A

HALF PLAN
1" = 20'

ALTERNATE DESIGNS
FOR THE FREMONT BRIDGE
FENDER SYSTEM

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS | 7-16-65 | SKETCH SK-1


2'-1"
10 x 12 Horiz. Wale (Typ.)
10 x 12 Rubber Block
Carbon Steel Bolt with Washer (Typ.)
Counterbore Wale
Corrosion-Resistant Steel Coupling Sleeve (Typ.)
Corrosion-Resistant Steel Bolt (Typ.)
3" Thick Sheathing (Bolt to 10 x 12 Wales)
10 x 12 Verts. @ 6' o.c.
8 x 12 Verts. @ 6' o.c.
5'-0" N.T.S.
4" Clearance
Face of Pedestal

TYPICAL CROSS SECTION OF FENDER SYSTEM

3/4" = 1'-0"

ALTERNATE DESIGNS
FOR THE FREMONT BRIDGE
FENDER SYSTEM

PARSONS BRINCKERHOFF, QUADE & DOUGLAS 7-16-65 SKETCH SK-2

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165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6800

July 14, 1965

Mr. R.L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310.

Re: Fremont Bridge at Portland, Oregon,
Supplementary Report on Alternate
Designs.

Dear Mr. Porter:

We are enclosing for shipment by Air Mail three (3) copies of our Supplementary Report on three additional alternate designs for the Fremont Bridge. Forty-seven (47) additional copies will be sent to you by Air Express tomorrow.

In accordance with the comments made in your letter to us of June 30, 1965, we have added Figure 8 to the Report and comments on it have been included on Page 14, and our preference for the truss outline shown on Figure 7 is indicated on Page 33.

Discussion of the time required to prepare the final designs and contract plans and specifications will be found on Pages 20 and 21. Except in a few minor editorial respects you will find that the final text is in agreement with the draft that has previously been sent to you.

In accordance with your request during our telephone conversation of July 9th, we will send you within the next few days additional information in letter form pertaining to the fenders that we would propose for the main piers in the designs having 650-ft. main spans and additional information pertaining to the economics of the use of steel open grating on the lower deck between the main piers for Designs 1 and S-3.

If we can be of further assistance to the Department in discussing these designs with the City of Portland or with the Bureau of Public Roads in Salem or Washington, D.C., we hope that you will call upon us.

I feel that under the terms of our contract we owe you, at no additional cost, a trip to Washington or Portland and Salem, as the case may be, and I shall be very glad to make such a trip whenever you feel that we may be of further assistance.

Sincerely yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

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165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

July 7, 1965

NOTED R. L. PORTER

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310.

Re: Fremont Bridge, Portland, Oregon -
Supplementary Engineering Report.

Dear Mr. Porter:

We are enclosing two preliminary draft copies of the balance of our supplementary report on three alternate designs for the Fremont Bridge over the Willamette River. In addition, revised copies of the pages covering the Table of Contents and lists of illustrations and tables are also enclosed.

Please disregard the cost estimates for Designs S-1, S-2 and S-3 that are contained in our letter to you of June 25, 1965. At that time we had received no information from either one of the two principal steel companies that were consulted and we were basing our estimates upon available data used in preparing the 1964 Report.

Subsequent to June 25th we did hear from the steel companies and were quite amazed at the substantial increases in prices for the new designs. Upon further inquiry and discussion we learned first of all that the new prices included escalation of about 7.5% during the past year and moreover that they had taken a second look at the prices for Design 6, the only long span evaluated in the 1964 Report, and had decided that the prices given at that time were too low. This is quite disturbing because of its effect on the relative costs of the short and long span layouts, and upon the conclusions that were drawn in the 1964 Report.

We have decided that the best way to meet this situation is to adjust all designs to the 1964 price level, including Design 6, and to prepare a revised cost estimate for Design 6 based on 1964 price levels. A new table (Table 5) has been prepared showing the substructure, superstructure and total costs for all the designs, omitting, however, the

alternates for Designs 1 and 2.

We then prepared a second table (Table 6) showing the costs of all designs with the prices for structural steel increased by 7.5% to show the costs at current price levels.

As you will note this means that the cost of the longer span designs is significantly in excess of that which might be expected from the cost of Design 6 given in the 1964 Report. This is, of course, an unfortunate occurrence and undoubtedly will be an important factor in the final selection of the design. Please note, however, that there are certain adjustments to be made in comparing the short span designs with the long span designs that are described in the Report.

We continue to think, however, that there would be many advantages in building the long span design. However, we now think that Design S-3 is the proper one to build even though it is not the most economical design. There is little choice in cost between Design 6 and S-3. The difference is certainly no greater than the limits of accuracy in estimating costs from preliminary designs. We are somewhat surprised that Design S-3 turned out to be slightly higher than that of Design 6, and are not quite sure that this would be the case if the two designs were to be put out for competitive bids. The difference, however, lies in the substructure costs which are higher for Design S-3 because of the greater heights of the main and anchor piers.

The Report does not yet take into account the comments made in your letter to us of June 30, 1965. We will revise the Report in accordance therewith but, in the meantime, it seems best to forward this draft for your additional comments.

As to the estimated time required to prepare plans and specifications, we do not think that there is any particular difference between Designs S-1 and S-3. We believe that, including the preliminary time required for obtaining any further approvals and getting started, the plans and specifications for the substructure contract would require about six months. An additional five months would be required to complete the plans and specifications for the superstructure. This difference in time would be compatible with the construction schedule since the substructure contract would need about that much lead time over the superstructure contract.

In the case of Design S-2, we believe that an additional two months would be required to prepare the substructure contract plans and specifications because of the difficult and complex work that has to be done on the anchorages. As in the case of S-1 and S-3, the superstructure plans and

specifications would require an additional five months.

In view of your comments about the outline of Design S-3, I think we should include an additional figure which will show an outline that has the lower chord parallel to the deck so that a comparison may be made. We have made an estimate of the cost involved in adding to the height of both main piers, and find that the cost of raising the lower chord will be $250,000. Appropriate additions to the text of the Report will be made to include the above information.

I think that it would be preferable to withhold printing the Report until you have had an opportunity to comment on the enclosed drafts and the information contained in this letter. I will plan to telephone you about 11:30 A.M.* on next Friday, July 9th or, if that hour is not convenient, you may prefer to telephone me.

– call completed at time mentioned –

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

MNQ:Y
w/encls.

* your time

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S-3 Through Cantilever Truss

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Revised 7/1/65

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Fig. 1 Design S-1 - Stiffened Tied Arch with Orthotropic Upper Deck

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Fig. 7 Design S-3 - Through Cantilever Truss

Revised 7/1/65

ESTIMATES OF CONSTRUCTION COSTS - 1964 PRICE LEVELS.

Tables 1, 2 and 3 record the estimated total costs of construction for the three designs investigated in this supplementary study based on 1964 price levels. Table 4 is a summary of the estimates of cost for all designs that have been studied and includes those that appear in the 1964 Report.

As in the 1964 Report, the estimates given in the tables which follow cover only the bridge structure including roadway, navigation and airways lighting between the study limits that have been designated. Excluded are the following costs:

1. Signs on the structure.
2. Right-of-way.
3. Demolition.
4. Restoration of buildings or waterfront structures.
5. Permanent or temporary street, railroad, and utility relocations.
6. Maintenance of railroad or highway traffic.
7. Engineering, legal, or administrative services.
8. An allowance for contingencies.

Tables 1 through 3 show detailed substructure and superstructure estimates for Designs S-1, S-2 and S-3 in which the estimated quantities of the individual items are listed together with the estimated unit prices. In the interest of simplicity in the presentation of these tables, some items such as cofferdams and lighting have been shown as lump sum costs rather than listing the individual

(Revised June 29,1965)

items which make up the work.

The unit prices for 1964 levels used in preparing the estimates are the result of considerable study, and represent the Consultants' best information based on bids received on similar projects. Additional information on the steel unit prices was obtained from discussions with two of the principal steel companies, who were furnished the steel quantities by the Consultants and made their recommendations after study of the details of all designs, taking into consideration erection methods, types of structures, and site location. The concrete and foundation excavation unit prices are average figures.

It should be noted that the cost of lighting includes only the cost of conduit, wiring, and the light units, many of which are mounted on brackets attached to the steel framing rather than on standards. Costs of transformers, feeders, controls, and other similar items necessary for the entire bridge are assumed to be included in the costs of the approaches.

An allowance for contingencies has not been included since it seems more appropriate to add such an allowance to the overall cost of the project, including those items of cost which have been omitted from these estimates. Although the estimates are considered adequate, some allowance for unforeseeable factors should be made. An allowance of five per cent of the construction costs given in this report is considered adequate.

(Revised June 29,1965)

In the 1964 Report most of the designs that were studied were based on a 650-foot main span with both main piers in the river. The high cost of these piers and the disadvantages arising from interference with navigation both during and after construction indicated to the Consultants that a design that would span the main river should be investigated. Accordingly, Design 6 was included in the Report. These supplementary studies of three long-span designs have caused the consultants and the two principal steel companies who provided information for both reports to re-examine the costs of Design 6. This new study has shown that the unit prices used in the 1964 Report were too low as of 1964 price levels. For this reason, a revised estimate of Design 6 is presented in Table 4.

Table 1

Fremont Bridge, Portland, Oregon

ESTIMATED CONSTRUCTION COSTS - 1964 Price Levels

DESIGN S-1 - STIFFENED TIED ARCH WITH ORTHOTROPIC UPPER DECK

(Main Span Unit 475' - 1350' - 475')

Substructure			
Foundation Excavation	39,650 c. y.	@ $6.00 =	$238,000
Tremie Concrete	11,000 c. y.	@ 30.00 =	330,000
Footing Concrete	15,200 c. y.	@ 40.00 =	608,000
Concrete Above Footings	8,650 c. y.	@ 60.00 =	519,000
Reinforcing Steel	1,250,000 lb.	@ 0.12 =	150,000
Steel H-Piles	62,200 l. f.	@ 12.00 =	746,000
Cofferdams	l. s.	=	310,000
Structural Carbon Steel	160,000 lb.	@ 0.40 =	64,000
	Total		$3,165,000
Superstructure			
Carbon Steel (Girders, Bracing, Floor System, and Bearings)	14,930,000 lb.	@ $0.36 =	$ 5,382,000
Low Alloy Steel (Girders and Arch Rib)	7,460,000 lb.	@ 0.38 =	2,835,000
Corrosion-Resistant Steel Deck Plate	3,520,000 lb.	@ 0.41 =	1,443,000
High Strength Steel	11,620,000 lb.	@ 0.40 =	4,648,000
Ropes and Sockets	120,000 lb.	@ 0.80 =	96,000
1½" Asphalt Wearing Course	2030 tons	@ 1200 =	25,000
Deck Concrete	4,180 c. y.	@ 9000 =	376,000
Reinforcing Steel	840,000 lb.	@ 012 =	101,000

Three-Ply Membrane Waterproofing	14,600 s. y. @	3.50 =	51,000
Bridge Railing	10,540 l. f. @	4.30 =	48,000
Roadway and Navigation Lighting	l. s.	=	30,000
	Total		$15,055,000
	Total Cost		$18,220,000

Table 2

Fremont Bridge, Portland, Oregon

ESTIMATED CONSTRUCTION COSTS - 1964 Price Levels
DESIGN S-2 - EXTERNALLY ANCHORED SUSPENSION BRIDGE
(Main Span Unit 590'-1180'-590')

Substructure			
Foundation Excavation	87,700 c.y. @	$6.00	$ 526,000
Tremie Concrete	27,300 c.y. @	30.00	819,000
Footing Concrete	43,800 c.y. @	40.00	1,752,000
Concrete Above Footings	54,200 c.y. @	52.00	2,819,000
Reinforcing Steel	3,120,000 lb. @	0.12	375,000
Structural Carbon Steel	1,500,000 lb. @	0.30	450,000
Structural Low Alloy Steel	1,820,000 lb. @	0.35	637,000
Steel H-Piles	51,200 l.f. @	12.00	615,000
Cofferdams	l.s.		980,000
	Total		$ 8,973,000
Superstructure			
Carbon Steel (Trusses, Bracing, Floor System, Towers)	15,000,000 lb. @	$ 0.305	$ 4,575,000
Low Alloy Steel (Trusses, Towers and Girders)	8,330,000 lb. @	0.325	2,707,000
Cables	4,410,000 lb. @	0.65	2,867,000
Cable Wrapping	100,000 lb. @	1.37	137,000
Castings	710,000 lb. @	0.75	533,000
Deck Concrete	7,900 c.y. @	90.00	711,000
Reinforcing Steel	1,500,000 lb. @	0.12	190,000
Bridge Railing	11,200 l.f. @	4.50	50,000
Roadway and Navigation Lighting	l.s.		50,000
Elevators in Towers	l.s.		50,000
	Total		$ 11,870,000
	Total Cost		$ 20,843,000

Table 2

Fremont Bridge, Portland, Oregon

ESTIMATED CONSTRUCTION COSTS - 1964 Price Levels
DESIGN S-2 - SEMI-FULLY ANCHORED SUSPENSION BRIDGE
(Main Span Unit 590'-1180'-590')

Substructure			
Foundation Excavation	87,700 c.y. @	$6.00	$ 526,000
Tremie Concrete	27,300 c.y. @	30.00	819,000
Footing Concrete	43,800 c.y. @	40.00	1,752,000
Concrete Above Footings	54,200 c.y. @	52.00	2,819,000
Reinforcing Steel	3,120,000 lb. @	0.12	375,000
Structural Carbon Steel	1,500,000 lb. @	0.30	450,000
Structural Low Alloy Steel	1,820,000 lb. @	0.35	637,000
Steel H-Piles	51,200 l.f. @	12.00	615,000
Cofferdams	l.s.		980,000
	Total		$ 8,973,000
Superstructure			
Carbon Steel (Trusses, Bracing, Floor System, Towers)	13,000,000 lb. @	$ 0.305	$ 4,375,000
Low Alloy Steel (Trusses, Towers and Girders)	8,330,000 lb. @	0.325	2,707,000
Cables	4,410,000 lb. @	0.65	2,867,000
Cable Wrapping	100,000 lb. @	1.37	137,000
Castings	710,000 lb. @	0.75	533,000
Deck Concrete	7,900 c.y. @	90.00	711,000
Reinforcing Steel	1,580,000 lb. @	0.12	190,000
Bridge Railing	11,200 l.f. @	4.50	50,000
Roadway and Navigation Lighting	l.s.		50,000
Elevators in Towers	l.s.		50,000
	Total		$ 11,870,000
	Total Cost		$ 20,843,000

Table 3

Fremont Bridge, Portland, Oregon

ESTIMATED CONSTRUCTION COSTS - 1964 Price Levels
DESIGN S-3 THROUGH CANTILEVER TRUSS
(Main Span Unit 575'-1150'-575')

Substructure				
Foundation Excavation	33,400 c.y.	@	$6.00	$201,000
Tremie Concrete	11,050 c.y.	@	30.00	332,000
Footing Concrete	10,400 c.y.	@	40.00	416,000
Concrete Above Footings	20,750 c.y.	@	60.00	1,245,000
Reinforcing Steel	2,350,000 lb.	@	0.12	282,000
Structural Carbon Steel	140,000 lb.	@	0.40	56,000
Steel H-Piles	66,400 l.f.	@	12.00	797,000
Cofferdams	l.s.			490,000
	Total			$ 3,819,000
Superstructure				
Carbon Steel (Trusses, Bracing and Floor System)	20,170,000 lb.	@	0.345	$ 6,959,000
Low Alloy Steel(Trusses)	2,050,000 lb.	@	0.355	727,000
High Strength Steel(Trusses)	9,320,000 lb.	@	0.385	3,588,000
Shear Connectors	l.s.			80,000
Deck Concrete	7,430 c.y.	@	90.00	669,000
Reinforcing Steel	1,490,000 lb.	@	0.12	179,000
Bridge Railing	10,660 l.f.	@	4.50	48,000
Roadway and Navigation Lighting	l.s.			50,000
	Total			$ 12,300,000
	Total Cost			$ 16,119,000

Table 4

Fremont Bridge, Portland, Oregon

REVISED ESTIMATED CONSTRUCTION COSTS - 1964 Price Levels
DESIGN 6 - CONTINUOUS TIED ARCH TRUSS
(Main Span Unit 330'-1135'-330')

Substructure

Same as in 1964 Report			$3,023,000

Superstructure

Carbon Steel (Trusses, Bracing and Floor System)	23,071,000 lb. @	$0.30	$ 6,921,000
Low Alloy Steel(Trusses)	4,868,000 lb. @	0.34	1,947,000
High Strength Steel(Trusses)	7,860,000 lb. @	0.38	2,987,000
Deck Concrete	7,230 c.y.@	90.00	651,000
Reinforcing Steel	1,446,000 lb. @	0.12	173,000
Bridge Railing	10,220 l.f.@	4.50	46,000
Roadway and Navigation Lighting	l.s.		50,000
	Total		$ 12,775,000
	Total Cost		$ 15,798,000

Table 5

Fremont Bridge, Portland, Oregon

SUMMARY OF ESTIMATED CONSTRUCTION COSTS - 1964 Levels

Design No.	Type	Main Span Lengths	Sub-structure	Super-structure	Total
1	Through Cantilever Truss	455' - 650' - 455'	$6,039,000	$7,403,000	$13,442,000
2	Continuous Tied Arch Truss	455' - 650' - 455'	6,459,000	8,185,000	14,634,000
4	Single Span Tied Arch	650'	6,710,000	8,337,000	15,047,000
3	Self-Anchored Suspension Bridge	455' - 650' - 455'	6,459,000	9,055,000	15,514,000
6	Continuous Tied Arch Truss	500' - 1,135' - 500'	3,023,000	12,775,000	15,798,000
5-3	Through Cantilever Truss	575' - 1,150' - 575'	3,819,000	12,300,000	16,119,000
5	Orthotropic Deck Plate Girders	490' - 650' - 490'	6,029,000	10,960,000	16,989,000
7	Orthotropic Deck Plate Girders	500' - 1,135' - 500'	No Detailed Estimate		17,500,000 to 18,000,000
S-1	Stiffened Tied Arch with Orthotropic Upper Deck	475' - 1,350' - 475'	3,165,000	15,055,000	18,220,000
S-2	Externally Anchored Suspension Bridge	590' - 1,180' - 590'	8,973,000	11,870,000	20,843,000

ESTIMATES OF CONSTRUCTION COSTS - 1965 PRICE LEVELS

Although there is no evidence of an appreciable [redacted] increase in the cost of bridge sub-structures, there is evidence of an increase in the costs of steel superstructures during the past year. This increase is estimated to be approximately 7.5 per cent. It is due largely to an increase in the cost of shop labor and a significantly larger increase in the cost of labor for field erection. The latter increases are due in part to larger fringe benefits and, because of a scarcity of erection labor, the need to provide a certain amount of overtime at premium wages. Moreover, the uncertainties of a possible strike in the steel industry later this year and the possibility of further increases in wage rates must be considered in the estimates.

Table 6, which follows, shows the adjusted costs of the various designs - including those in the 1964 Report for this increase in steel prices. It should be noted that Designs S-1, S-2, and S-3 are based on overall lengths of main bridge that are longer than those in the 1964 Report. For comparative purposes a deduction amounting to approximately $ 250,000. in the cost should be applied to the estimates for those designs.

Table 6

Fremont Bridge, Portland, Oregon

SUMMARY OF ESTIMATED CONSTRUCTION COSTS - 1965 Price Levels

Design No.	Type	Main Span Lengths	Sub-structure	Super-structure	Total
1	Through Cantilever Truss	455' - 650' - 455'	$6,039,000	$7,891,000	$13,930,000
2	Continuous Tied Arch Truss	455' - 650' - 455'	6,459,000	8,711,000	15,170,000
4	Single Span Tied Arch	650'	6,710,000	8,890,000	15,600,000
3	Self-Anchored Suspension Bridge	455' - 650' - 455'	6,459,000	9,601.000	16,060,000
6	Continuous Tied Arch Truss	500' - 1135' - 500'	3,023,000	13,667,000	16,690,000
3-3	Through Cantilever Truss	575' - 1,150' - 575'	3,819,000	13,141,000	16,960,000
5	Orthotropic Deck Plate Girders	490' - 650' - 490'	6,029,000	11,721,000	17,750,000
7	Orthotropic Deck Plate Girders	500' - 1,135' - 500'	No Detailed Estimate		18,500,000 to 19,000,000
8-1	Stiffened Tied Arch with Orthotropic Upper Deck	475' - 1,350' - 475'	3,165,000	16,135,000	19,300,000
8-2	Externally Anchored Suspension Bridge	590' - 1,180' - 590'	8,973,000	12,677,000	21,650,000

AESTHETIC CONSIDERATIONS

As stated in the 1964 Report, the double-deck construction of the Fremont Bridge creates a special aesthetic problem in bridge design because the two decks appear as heavy parallel curving lines of steel and concrete and the light and shadows accentuate the deck lines. It was further stated in that Report that the selection of a particular design because of its appearance is so much a matter of individual opinion and taste that evaluation from this point of view alone becomes difficult.

There seems to be no doubt that for this bridge the designs having the long main spans (6,7,8-1, 8-2 and 8-3) are superior in appearance as well as having other advantages by reason of spanning the entire river. In all probability the double deck construction is an important factor in the superior appearance of the longer span designs. An important factor in the appearance of those designs having a 650-foot main span is the length of the side spans which, because of railroad tracks and other topographical features along the banks of the river, are too long in proportion to the length of the main span to permit the most pleasing appearance. This is especially noticeable in Designs 1, 3, and 5. It is somewhat less noticeable in Design 2 but the disadvantage has been partly overcome in Design 4 by the use of an additional side span at some sacrifice in total cost.

Design 1, although the least costly, is probably the least attractive of the designs having a 650-foot main span. With due regard for the unique and striking appearance of Design 5 and for the opinion of the Architect who created it, the consultants are of the opinion that Design 2 is the most attractive of the 650-foot main span designs. It is second in order of cost.

Of the five designs having main spans varying from 1135 feet to 1350 feet, S-1 is considered to be the most pleasing in appearance but it has certain disadvantages which are discussed elsewhere in this report. S-2 is perhaps second in order of appearance but is the most costly of all by quite a large margin. Design 7 was presented in the 1964 Report by the Consulting Architect. It is superior in appearance to Design 5, its shorter span counterpart, and, like it, is unusual and striking in appearance.

Design 6, in the opinion of the consultants, is an attractive design. With its high rise central arch span it would, however, dominate the surrounding terrain and it has the appearance of being a massive though attractive structure.

The consultants are well pleased with the appearance of the long-span through cantilever truss, S-3. The increase in panel length has resulted in fewer members and a more open appearance than was possible in Design 1. The breaks in the line of the lower chord at the main piers made possible by the longer main span without encroaching on the navigation clearance has also improved the appearance. Its outline is well adapted to the double deck construction and it suggests a rugged strength and rigidity which is lacking in Designs S-1 and 7. Overall it has a more slender outline than Design 6.

CONCLUSIONS AND RECOMMENDATIONS.

All of the designs submitted herein and in the 1964 Report are practicable from an engineering viewpoint in that they can be designed and constructed. From the consultant's aesthetic point of view, the designs having the greatest merit are Designs S-1, S-2, S-3, 6 and 7. From the viewpoint of cost, the short span through cantilever truss (Design 1) is the cheapest and provides the basis of cost comparison.

While pleasing in appearance, the consultants reject Design S-2, the externally anchored suspension bridge, on the basis of its high cost which is 55 per cent greater than that of Design 1 and is about $2.Million greater than its nearest competitor in cost, Design S-1, even after applying an adjustment in cost for its greater overall length.

Although it can be considered as being the most attractive in appearance, the consultants also reject Design S-1, the stiffened tied arch with orthotropic upper deck. In addition to the higher cost amounting to about $2.3 Million above that of a trussed design having approximately the same main span length, this design can be expected to be relatively flexible under the heavy live loads from 8 lanes of traffic on two decks and under wind and earthquake forces. In addition, it has, like Designs 5 and 7, an orthotropic deck. A completely satisfactory solution for the wearing surface on an orthotropic deck has not yet been found.(See pages 18 and 19 of 1964 Report).

In the opinion of the consultants, the choice for the recommended design lies between Design 6 and S-3. There is little difference in cost. In fact, it is so small as to be within the limits of accuracy in estimating at this preliminary stage of the engineering. The superstructure of S-3 costs a little less than that of 6 but the substructure of 6 costs less than the substructure of S-3 because the side span trusses in Design 6 are deeper and the piers are shorter and therefore have less dead load weight and smaller overturning moments under lateral and longitudinal loads. The consultants prefer Design S-3, the through cantilever truss design, and recommend that it be adopted. P Re-examination of the cost of the structural steel in Design 6 that was presented in the 1964 Report has resulted in a substantial increase in the cost as of 1964 price levels.(See Table 7 in 1964 Report and Table 4 in this supplementary report). This increase has altered the relative economies of the short and long main span designs because the long span designs contain much more structural steel. The estimated increase of approximately 7.5 per cent in price level of structural steel between 1964 and 1965 further alters the relative economies of the short and long span designs. It will be understood that the consultants have had to rely to a greater than usual degree upon data obtained from the steel companies in estimating the costs of these uncommon designs. The decision to re-examine the costs of Design 6 originated with the Steel Companies and the consultants have no reason to question the need for it.

A comparison between the costs of the cheapest design (Design 1) and the recommended design (Design S-3) is in order. Both are through cantilever truss designs. Their estimated costs are $13,930,000 and $16,960,000 respectively - in round numbers

a difference of $3 million. However, two adjustments in comparative cost should be made. Design S-3 is longer by 80 feet; therefore, the cost of 80 feet of double deck approach spans must be added to Design 1. This is estimated to be $250,000. In addition the consultants regard the fender protection presently provided and as shown on the Permit Application for the main piers of all designs having 650-foot main spans as being inadequate. They continue to be of the opinion that much heavier fenders will be found necessary upon final design and that the increase in cost of such fenders would be at least $350,000 for Designs 1 through 5. In addition, maintenance costs for the fenders can be expected to be quite high in future years. With these two adjustments the difference in cost is reduced to $2.4 million. A further reduction in the relative cost could be achieved by the use of open steel grating for the lower deck between main piers because the large reduction in dead load would have a greater effect on the longer main span. The consultants have previously and do now recommend open steel grating in that location for all designs except Designs 3 and 7 where both the upper and lower decks are of orthotropic construction. If used in the recommended location the savings in cost in all designs would be large.

It should be noted that if the $600,000 adjustments in cost are applied to Design 2, the continuous tied arch truss with a 650-foot main span, the increase in cost of Design S-3 over Design 2, so adjusted is $1.2 million.

Design S-3, the through cantilever truss with a 1150-foot main span is recommended for the following reasons:

1. Elimination of the main piers in the river will remove all hazards to navigation both during and after construction and

permit free and uninterrupted use of the wharves along the river banks. Also eliminated is the need for expensive and unsightly fenders and the future costs of maintaining them. Without piers in the river the time of construction would be reduced.

2. A bridge that is much more pleasing in appearance can be obtained at a cost of $2.4 million more than the cost of the cheapest design. This differential is twice that of the best appearing design having a 650-foot main span (Design 2) but is only one-half of the difference in cost between the cheapest design and the design having the best appearance (Design 3-1). Design 8-3 therefore appears to be a very satisfactory compromise between cost and appearance.

3. Design 8-3 is a type that has a long history of successful usage and application to bridge crossings. It is a rugged, rigid type well adapted to the heavy dead and live loads and is entirely determinate in all respects. It is the easiest to erect and requires very little additional steel for erection purposes.

The same comments and reasons also apply to Design 6, the continuous tied arch truss and the difference in cost between Designs 8-3 and 6 is so small as to be negligible at this stage of the work. However, in view of these further studies the consultants prefer Design 8-3 and recommend that it be adopted.

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June 30, 1965

AIRMAIL

Mr. M. H. Quade
Jacobus, Krimberhoff, Quade & Douglas
165 Broadway
New York, N. Y. 10006

Dear Mr. Quade:

This will acknowledge receipt of your June 25 letter together with the preliminary report and drawings for the additional designs of the proposed Fremont Bridge.

The preliminary draft of the report is satisfactory. It would be helpful to this Department, however, if some mention could be made as to the estimated time required to prepare detailed plans and specifications for the three types considered.

Because of the substantial difference in cost between the S-1 and S-2 types and S-3, it would appear almost certain that the latter or Design 4 of the original report are the only ones that might receive Bureau of Public Roads concurrence. We are not (for the moment, at least) considering piers in the stream bed.

Knowing fully that esthetics and appearance are largely a matter of personal opinion, there have been, nevertheless, considerable comments by members of this Department as to whether the suggested S-3 design or one in which the lower chord was parallel to the deck might be more esthetically acceptable. I understand that certain economies are inherent in your suggested plan. We would, therefore, appreciate your comments as to the additional cost involved with the lower chord being parallel to or nearly coincident with the lower deck which undoubtedly would require a greater depth of truss above the piers as well as higher piers themselves.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms
cc Forrest Cooper
Tom Edwards
Victor D. Wolfe
I. D. Merchant

FORM E-60 BOH 3-58 SP*6670-784

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

June 29, 1965

SUBJECT: Fremont Bridge
Bridge No. 2529
Review of Supplementary Engineering Report

To:
Mr. R. L. Porter
Deputy State Highway Engineer
O F F I C E

As per your request I have reviewed the Supplementary Engineering Report prepared by Parsons, Brinckerhoff, Quade & Douglas for three additional design type studies for the Fremont Bridge. The report is not complete inasmuch as the sections on aesthetic considerations and the conclusions and recommendations are not included.

The portion of the report reviewed seems to me to be satisfactory. However, there are a few points that I believe should be called to the consultants attention at this time.

In connection with design S-1 the stiffened tied arch or Port Mann type structure, the statement is made on Page 21 that additional design time would be required for this type. Also, on Page 9 the statement is made that "extensive wind tunnel tests" would be necessary in order to determine the transverse and longitudinal wind loads to be applied to the structure. I believe we should request a definite expression from the consultants as to the excess time for the preparation of contract plans for this type over designs S-2 and S-3.

In the letter of transmittal and also on Page 16 of the report the statement is made that the geometry of design S-3 is superior to that of Figs. 5 and 5A of the 1964 report. The geometry referred to is the lowering of the bottom chord at the intermediate piers to obtain additional truss depth and to decrease pier costs. This is a matter of opinion, however, I will state that I believe the structure appearance would be better if the bottom chord followed the grade line of the lower deck so that in elevation a continuous bottom chord is obtained. It is realized that this is done at the expense of increasing the pier height and raising the high points of the truss over the main piers.

On Page 14 under the discussion for design S-2 the statement is made that the roadways within the cable anchorages would be supported by steel spans. I can see no reason for having steel spans within the anchorage length

and would suggest that a study be made for concrete supports for both roadways.

I am returning the copy of Supplementary Engineering Report, together with Figs. 1 to 7, inclusive, accompanying the report.

Ivan D. Merchant
Bridge Engineer

IDM:mm
Attachment

cc: Mr. Tom Edwards

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
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FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
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WILLIAM BARCLAY PARSONS 1885 - 1932
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JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

June 25, 1965

Mr. R . L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310.

Re: Fremont Bridge at Portland -
Supplementary Engineering Report.

Dear Mr. Porter:

In accordance with our telephone conversation of yesterday, I am enclosing one preliminary copy in draft form of our supplementary report on three alternate designs for the Fremont Bridge over the Willamette River. The parts of the report which are not yet completed are the four tables covering the estimates of cost and the sections on aesthetic considerations and the conclusions and recommendations.

In addition I am enclosing one print each of the seven figures which will be included in this report. The prints of the figures are, of course, at their original size; they will be reduced to report size drawings later. In reviewing the text and the figures please bear in mind that both of them are preliminary. The text is the first draft, subject to review and checking by the staff, and subject to final editing. The drawings for the figures are also preliminary and you will note that these particular prints contain some corrections in red pencil.

The estimates are not yet completed. We have all the quantity takeoffs and have our own appraisal of the unit prices that should be used in the items that require unit prices. However, about five weeks ago we consulted two of the principal steel companies and asked them to give us their evaluation independently on the unit prices that might be expected on the steel items. We expected to have this information by June 15th but we have not yet received it. We hope to hear from the steel companies the early part of next week and immediately thereafter complete the report.

If this schedule is maintained, we would expect to be able to print it and forward the requisite number of copies about July 9th. In this connection our contract calls for the delivery of 50 copies. Will this number be satisfactory?

In the meantime, we will give you in rounded numbers the total costs of the three designs computed in accordance with the section of the report entitled: "Estimates of Construction Costs":

Design S-1 - The stiffened tied arch is estimated to cost $19 million.

Design S-2 - The externally anchored suspension bridge is estimated to cost $19.5 million. This is higher than the offhand figure which I gave you on the telephone yesterday.

Design S-3 - The long span through cantilever bridge is estimated to cost $14 million.

I think you will agree after looking at Figure 7 that the appearance of the long span cantilever is very superior to that of the short span cantilever shown in Figures 5 and 5A of our 1964 Report.

Your prompt review of the preliminary draft of the portions of the text and of the figures that are enclosed herewith will be very much appreciated in order that we may start typing the text on final mats and order the plates for the illustrations. The balance of the text will be sent to you as soon as we have heard from the steel companies.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. M. Quade

MMQ:Y
w/encls.

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Sp.

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310

No. 627

TO

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

165 BROADWAY, NEW YORK 6, N. Y.

May 20, 1965

For Engineering and Architectural Services in connection with the investigation of several types of structures for the main span of a proposed bridge over and across the Willamette River in Portland, Oregon in accordance with our agreement dated February 8, 1965.

Salaries of Staff - See Schedule "A" attached		$ 4,120.25
Total Reimbursable Cost		$ 4,120.25
Lump Sum Fee	$ 18,500.00	
Percentage of Reimbursable Costs - $4120.25 ÷ 14,500.00 = 28.416%		
Lump Sum Fee $18,500.00 X 28.416%		5,256.96
Total		$ 9,377.21
Less: 10% Retained Fee		937.72
AMOUNT DUE		$ 8,439.49

Orig & Mimeo
5-21-65

SCHEDULE " " TO SUPPORT INVOICE NO. 627 DATED MAY 20, 1965

Salaries of Staff	Hours	Rate	Amount	
Nov. 21 to Dec. 18, 1964				
M. E. Fiore	4	8.25	$ 33.00	
J. Swindlehurst	6	4.50	27.00	
G. Vaccaro	5	6.50	32.50	
V. Sepcenko	4	4.60	18.40	$ 110.90
Dec. 19, 1964 to Jan. 15, 1965				
M. E. Fiore	1	8.25	8.25	
G. W. Kingston	3	4.75	14.25	22.50
Jan. 16 to Feb. 12, 1965				
M. E. Fiore	8	8.25	66.00	
J. Swindlehurst	106	4.50	477.00	
V. Sepcenko	40	4.60	184.00	
S. Steuerman	2	5.80	11.60	
I. W. Tarshansky	3	5.25	15.75	754.35
Feb. 13 to March 12, 1965				
M. E. Fiore	7	8.25	57.75	
J. Swindlehurst	132	4.50	594.00	
V. Sepcenko	149	4.60	685.40	
J. P. Connoly	22	2.10	46.20	
P. W. Hanna	11	3.75	41.25	
J. G. Boyd	21	4.60	96.60	1,521.20
March 13 to April 9, 1965				
M. E. Fiore	11	8.25	90.75	
J. Swindlehurst	145	4.50	652.50	
V. Sepcenko	157	4.60	722.20	
S. Steuerman	2	5.80	11.60	
J. P. Connolly	37	2.10	77.70	
J. P. Connolly (O.T.)	18	2.10	37.80	
J. G. Boyd	6	5.00	30.00	
J. G. Boyd (O.T.)	12 1/2	5.00	62.50	
P. W. Hanna	7	3.75	26.25	1,711.30
		TOTAL		$ 4,120.25

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MAY 21 1965
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I-405-8(17)303
#7276

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

April 23, 1965

Parsons, Brinckerhoff, Quade
and Douglas
165 Broadway
New York, New York 10006

Gentlemen:

Fremont Bridge
Additional Test Hole Data

Enclosed please find a print dated 3/31/65, foundation data on which has been plotted the results of Test Hole 3CD at Station FB 3 351+75. This is the test hole on the East side of the river under the old Luckenbach Terminal Building. Also, enclosed are two sheets covering the driller's log of the test hole.

It is noted that at elevation -70 there is a thin layer designated as dark gray compact silt scattered small gravel. It is not believed that this is a compressible layer, and that any foundation founded above it would be perfectly adequate.

This completes the additional core drilling requested by your letter of February 5, 1965.

Very truly yours,

Ivan D. Marchant
Bridge Engineer

IDMrm
Enclosure

cc: Mr. R. L. Porter

NOTED
R. L PORTER

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7276

Salem, Oregon
April 22, 1965

Mr. Forrest Cooper
State Highway Engineer

Ap.

O F F I C E

This is to bring you up to date on the cost of the supplemental design for the Fremont Bridge in Portland being prepared by Parsons, Brinckerhoff, Quade & Douglas.

As you know, we are under positive agreement with the firm to provide three supplemental ideas at a cost not to exceed $33,000. The consultants state that they have run into unprecedented additional expense in attempting to analyze the Port Mann type of structure and have indicated they thought they would be entitled to additional compensation. They have very plainly told us that if we have no way of considering this additional compensation, they would proceed with the work as they had agreed.

I have urged the firm to provide us with the full data so that we can discuss the matter with the Bureau of Public Roads and have explained it would be necessary to get this request for an increased fee approved before the expense was incurred. So far, the required data has not been furnished, although the firm has indicated that the additional expense is in the neighborhood of $2,000.

In summary, we are not obligated at the moment for any additional fee and it is well understood by all parties that before any increase can be considered, concurrence of the Bureau of Public Roads must be obtained.

R. L. Porter
Deputy State Highway Engineer

RLP:ms
cc Mr. Victor D. Wolfe

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APR 21 1965
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I-405-8(17)303
7276

April 21, 1965

AIRMAIL

Mr. M. H. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York, N. Y. 10006

Dear Mr. Quade:

Thank you for your April 15 letter relative to the problems encountered in the analysis of Design S-1 for the Fremont Bridge on Interstate Route 405 in Portland

It is this Department's desire that you prepare a cost estimate for this type based on your best appraisal of quantities and cost without a complete resolution of the several complex design problems. In your report, you are invited to make whatever comment you feel appropriate as to the complexities of such a design and present any arguments pro or con relative to it.

I am not sure but I believe that I mentioned previously that C.B.A. Engineering, Ltd., Vancouver, had convinced the Portland Art Commission that this type of structure would be desirable at the Fremont site and the Art Commission, in turn, had prevailed upon the City Council of Portland to recommend such a design. Apparently, C.B.A. made only a rapid estimate of their ideas of the cost of such a structure and our reason for asking you to analyze the problem is to provide us with a truly objective cost comparison between this and the other types requested. C.B.A.'s estimate contemplated a lower cost of lightweight concrete. However, the Oregon Highway Department has not had good success with this type of construction and would not wish to incorporate it into the Fremont structure unless absolutely necessary. For the above reasons, I believe that no additional consideration should be given to Designs S-1A and S-1-B at this time.

As soon as you are prepared to furnish us with supporting data on additional costs, we will be glad to consider the matter and, if in order, attempt to get Bureau of Public Roads approval.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

cc Mr. Forrest Cooper
Mr. Tom Edwards
Mr. Victor D. Wolfe
Mr. I. D. Merchant

RLP:ms

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
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ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

April 15, 1965

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310.

Re: Freemont Bridge, Portland, Oregon.

Dear Mr. Porter:

We have received the first results from the computer analysis of Design S-1, the proposed Port Mann type of structure. At the present time, these results are such that more new problems have been created than have been solved to date. For example, the tremendous moments shown by this analysis demonstrate that very large jacking forces will be necessary to reduce dead load moments to a minimum in the completed bridge and they create intricate problems in how and when permanent connections of various members shall be made to avoid distortion and bending initially, during jacking, and in the completed structure.

NOTED
R. L. PORTER

cc: A. Merchant
E. Edwards
with letter 4-19-65

It seems quite evident that, due to the need to use high strength steels extensively, the final structure will be quite flexible - possibly to such a degree that movements and deflections resulting from temperature, wind loads, earthquake forces, and live loads could be objectionable structurally and those from wind and live loads might be sensed by the public and therefore become a cause for adverse criticism. At present this is only a guess on my part. Possibly some of the questions can be fully answered only during the final design stage.

The magnitude of the jacking loads and other elements of the problems are much greater because of the use of a concrete deck except where orthotropic deck must be used for structural reasons. We can not help but wonder whether those who proposed the Port Mann type took into account fully the effect of the second heavy deck on all types of loading that would be applied to the bridge.

On the basis of our present knowledge of this type of structure, I can not help but think that it is unwise to go to such extremes

as the Port Mann type merely for the sake of aesthetics. Certainly it has no other advantage. It is not economic; it is flexible; it is highly indeterminate statically; and it obviously requires extremely close control and extensive adjustment by jacks during construction. The question here is not whether it can be done, but rather, is it worth it?

With that in mind we have considered several alternates that would represent structural improvements without seriously affecting the general outline and proportions of the bridge. The two that appear to be the most promising are those shown as S-1A and S-1B on the enclosed sketch, three prints of which are submitted for your consideration. S-1, the original Port Mann design adapted to this site, has been added for comparison.

S-1A is statically determinate and consists of a tied-arch suspended span stiffened by at least one orthotropic deck. It would be preferable, we think, to use orthotropic construction for both the upper and lower decks to provide the required moment resistence and stiffness under partial, unbalanced live loads. Probably only the lower deck would provide the tension tie for the arch rib thrust. Preferably the suspended span would be fixed longitudinally at one end and would expand at the other end. Some rather massive supports at the end of the cantilever arms which are not shown on the enclosed small scale sketch would be required. The end panels on the cantilever arms would probably be solid.

By adding diagonals to the cantilever and anchor spans below the lower deck, statically determinate cantilever and anchor trusses are obtained. The truss is somewhat shallow for economy and the chords may prove to be so deep in relation to panel length that design for secondary stresses may be required. The upper deck would be supported by rigid rectangular framed bents. This design affords the same aesthetic advantage as S-1 in that only vertical members at approximately 50 ft. spacing connect the two decks. This will improve the appearance of the bridge - particularly as seen from the lower deck - and it will be more pleasant to drive across it on the lower deck.

It is difficult to show it toscale on the small scale sketch enclosed, but there will be a considerable break in the overall depths of the decks as seen in projected elevation. Both decks on the suspended span are likely to be orthotropic and would be about 10 ft. deep; those on the cantilevers and anchor arms would be much shallower - probably 5 ft. in depth of vertical projection - and would be conventional stringer and floorbeam construction.

Design S-1B utilizes a Warren stiffening truss between decks in place of orthotropic construction for the stiffening element of all spans. Diagonals have not been added to the trusses below the level of the lower deck because of the fact that the number of members and the random angles at their intersections result in an unpleasant appearance. The design is inferior in appearance to the conventional through cantilever.

In Design S-1B diagonals are placed between decks thus multiplying by 2 the number of members opposite traffic on the lower deck. This design is not statically determinate and it would involve some of the same jacking problems that are found in S-1. The erection would be considerably easier and probably cheaper than S-1.

It will be noted that conventional concrete decks <u>can</u> be used throughout the entire length of bridge for both decks in design S-1B. We do not recommend it in that we continue to think that open steel grating should be used for the lower deck between main piers on all designs. This would greatly lighten the dead loads and reduce the stresses. In Design S-1A, in particular, concrete decks on the anchor arms are economical and advantageous because the added weight is useful there to overcome negative moment and uplift.

Our Staff Architect, Mr. Ralston W. Newsam, is of the opinion (and our bridge engineers must agree) that S-1 has the most aesthetic appeal; that S-1A is pleasing in appearance and is acceptable; and that S-1B is the least attractive of the three designs.

It is quite evident to us that there are many design questions about S-1 that can not be resolved during the present preliminary studies and investigation. It is equally evident that the effort and cost would be wasted if, in the end, you and the Bureau of Public Roads will reject any design involving an orthotropic deck. Our specific questions at this time are these:

1. Will it be satisfactory to proceed with S-1 and prepare a cost estimate that will be based on our best appaisal of quantities and costs without complete resolution of several difficult complex design problems?

2. Shall we add to our studies Design S-1A?

Referring to your letter of April 9, 1965 in reply to our letter of April 7, we have intended to finish the required work on S-1 regardless of the computer cost because we feel obligated to do so; hence

any costs incurred prior to your approval and BPR approval would be at our own risk. We do not yet know what these costs will be but the order of magnitude may be about $2,000. We intended to take the chance and do the work, then if we are seriously hurt financially, ask for your consideration of an adjustment.

If you would like us to add Design S-1A to our studies we will be glad to submit a proposal promptly for the added study. Perhaps this supplementary proposal could include some adjustment for the unexpected computer cost for S-1.

Very truly yours,

PARSONS,BRINCKERHOFF,QUADE & DOUGLAS

M. N. Quade

MNQ:Y
w/encls.

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APR 19 1965
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PORTLAND

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

STATE COPY
FROM
B. P. R. OREGON DIVISION

April 9, 1965

Mr. A. W. Parsons, Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon

Dear Sir:

Attached is a copy of a letter from Parsons, Brinckerhoff, Quade & Douglas having to do with the preliminary designs for three additional ideas on the Fremont Bridge.

Under the circumstances, this Department offers no objection to a 60-day extension in time for completing the work and we request your concurrence. I would appreciate as prompt a reply as possible so that we can advise the firm; also, that we cannot be responsible for any additional costs but that we will give consideration for such a request upon receipt of full factual data.

APPROVED DATE 4-13-65
A. W. Parsons, Division Engineer
Oregon Div., Bureau of Public Roads
By [signature] Title Asst Engr.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

ORIGINAL SIGNED
R. L. PORTER

R. L. Porter
Deputy State Highway Engineer

RLP:ms
att.

RECEIVED
APR 13 1965
OFFICE OF
STATE HIGHWAY ENGINEER

April 9, 1965

Airmail

Mr. H. B. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York, N. Y. 10006

Dear Mr. Quade:

This is in reference to your April 7 letter explaining your problems with a preliminary design for the Fremont Bridge in Portland; specifically, this is Design S-1, or the Fort Khan type of structure.

We have requested and received verbal approval from the Bureau of Public Roads for the 60-day time extension. As soon as written concurrence is forthcoming from that agency, you will be advised.

As to adjustment in fee, this matter must also be cleared with the BPR. It is suggested that before you incur expense which is not reimbursable under our present agreement, you give us a specific request with all of the factual data possible. I believe it has been explained that this is financed as a Federal-aid Interstate preliminary engineering project and any adjustments in cost or alterations to the original agreement terms must have prior approval of the Bureau of Public Roads.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms

cc Mr. Forrest Cooper
Mr. Tom Edwards
Mr. Victor D. Wolfe

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
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JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

April 7, 1965

NOTED
R. L PORTER

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310.

Re: Fremont Bridge - Portland, Oregon

Dear Mr. Porter:

We are experiencing some complications in completing our work on Design S-1 for the Fremont Bridge. This layout is a "stiffened tied arch" having two Vierendiel-type approach spans, the main spans being similar in layout to the Port Mann Bridge in Vancouver, Canada, that was proposed by the City of Portland.

At the time that we submitted our proposal on December 18, 1964 and for some time thereafter we had every reason to believe that preliminary designs for this type of span could be solved by the large computer owned by the American Bridge Division of the U. S. Steel Corporation, and that the computer would be available for this purpose. In our proposal of December 18, 1964 we had made provision in the lump sum fee for $1,000 as the amount of computer time that would be necessary for this solution. When I was in your office on January 8, 1965 I remarked at that time that we had underestimated the cost of that work and that indications were then that it would take about 10 hours computer time at a cost of $2,000 but I did not request any adjustment of our compensation. We still believed at that time, and on the basis of information received from American Bridge, that their existing computer program could handle the problem with comparatively little programming required .

When we sent one of our bridge engineers to Pittsburgh to initiate the work we found that first of all the computer would not be available at all for more than six weeks, and secondly - that a very large and expensive amount of programming would be necessary to handle a bridge of the Port Mann type.

We then attempted to handle this on our own relatively small computer, a Bendix 15-D, realizing full well that the program would be much longer and probably more difficult because of the relatively low memory of the Bendix 15-D.

Only recently we learned of the availability of another computer that could handle this work but not without some program adjustment. Earlier this week we signed an agreement with the I. T. T. Data Processing Center for the use of I.B.M. - 7094 and I.B.M. - 1401 data processing systems and support equipment to solve this problem.

Later on, when the full extent and costs of the work are known, we will probably have to ask your consideration of an adjustment in our compensation for these totally unexpected costs. However, the primary purpose of this letter is to request an extension of time in order to complete our report. If all goes well I would think that an extension of 60 days would be sufficient.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

MNQ:Y

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STATE HIGHWAY ENGINEER

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7276

March 31, 1965

Sp.

Parsons, Brinckerhoff, Quade
& Douglas
165 Broadway
New York, N.Y. 10006

Gentlemen:

NOTED
R. L PORTER

Fremont Bridge
Bridge No. 2/2)
Additional Test Data

As requested by your letter of February 5, additional test holes have been put down in the suspension bridge anchorage area of the proposed Fremont Bridge.

I am enclosing a print titled "Foundation Data" and dated 3/31/65 indicating the boring logs of four additional holes. The holes are not all in the location requested by you. However, insofar as possible the holes were put down in the general area requested.

The drill crews are now working on the requested additional hole at the east edge of the river under the Inchenbach Terminal building in the neighborhood of Station FD 325+82. The results of this drilling will be sent you as soon as it has been completed.

The test hole data indicates the type of material and the density as obtained from standard split spoon sample tests. No undisturbed samples were obtained because of the type of material encountered. Copies of the field exploration log are also included for your consideration.

Please advise if there is anything further that we can do to help you in this matter.

Very truly yours

RECEIVED
APR 5 1965
OFFICE OF
STATE HIGHWAY ENGINEER

Ivan D. Merchant
Bridge Engineer

IDM:mm
Encl.

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FEB 11 1965

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WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-5300

February 5, 1965

REFERRED TO
Merchant
BY DEPUTY STATE HIGHWAY ENGINEER

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310

Re: Fremont Bridge - Portland, Oregon

Dear Mr. Porter:

We are enclosing a print of Drawing No. 18934 on which we have indicated in red the location of four additional borings we feel are necessary for the new studies on the Fremont Bridge.

The additional borings should penetrate as a minimum to Elevation -60 and through at least 20 feet of material, with standard penetration blow count of not less than 40 blows per foot.

We would recommend that the four borings be of four-inch minimum diameter with standard split spoon samples taken at five-foot intervals, and undisturbed samples taken at ten-foot intervals. Furthermore, we recommend that stationary piston samplers be used for undisturbed sampling of the soft upper layers and a Denison core barrel sampler be used in the dense sand and gravel. If the driller is accustomed to using a bentonite slurry, it would be a good idea to use it in order to prevent a quick condition and to improve sample recovery.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. E. Fiore

MEF:ek
Encl.

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I-405-8(17) 303
7276

February 8, 1965

Ap.

Oregon State Highway Commission

Gentlemen:

In connection with the Fremont Bridge on Interstate Route 405 in Portland, the City Council requested that the Highway Commission give serious consideration to a type of structure that was recently completed in British Columbia. This is an arch-type bridge that spans the Fraser River near Vancouver and is commonly referred to as the Port Mann structure.

The designers of this bridge have had conferences with the Portland Art Commission and other official or quasi-official groups and apparently have sold their thinking to the City Council. The Canadian engineers did not make a detailed estimate of this type of construction but attempted to extrapolate the costs incurred at Port Mann with the conditions at the Fremont. In my opinion, their estimate is little better than a guess.

The matter has been discussed with the Bureau of Public Roads and the Bureau has approved the idea of having Parsons, Brinckerhoff, Quade and Douglas add three additional preliminary designs to their recently completed Fremont Bridge study. These three additional designs would be spans that would not require piers in the river and would be:

(1) a Port Mann type of arch structure

(2) a conventional suspension bridge

(3) a conventional type of cantilever bridge.

Arrangements have been made with the consulting firm to perform this additional work for an amount not to exceed $33,000. This figure becomes part of the preliminary engineering on Interstate 405 and is eligible for full Federal-aid Interstate participation.

There are many advantages for a structure that will span the entire channel and whether or not Federal approval can be obtained is not known. However, until accurate estimates are provided we are not in a position to make a recommendation to the Bureau of Public Roads that will be acceptable to the City of Portland. My off-the-cuff guess is that the cost of a Fort Nunn type of arch will not compete with some of the other proposals. Also, a conventional suspension bridge may prove too expensive; however, we cannot be certain until the matter is fully analyzed.

So that we will be fully armed with good cost estimates on practically every conceivable type of structure, I request that this supplemental work have your approval.

In order to expedite the work, I received verbal approval by telephone this date from the Chairman of the Highway Commission. This matter will be on the agenda for confirmation at the March 9 Commission meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc Floyd Query
R. L. Porter
P. W. Stephenson
Victor A. Otis
Ivan Merchant
C. H. Maison
Fred Kiaboe

RLP:ms fn

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
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ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6900

February 2, 1965

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310.

Re: Fremont Bridge, Portland, Oregon - Supplemental Agreement for Additional Engineering Studies.

Dear Mr. Porter:

NOTED
R. L. PORTER

In response to your letter of January 28, 1965 we are returning three executed copies of a Supplemental Agreement covering additional preliminary designs for the Fremont Bridge in Portland.

The agreement as written is quite satisfactory with one minor respect that does not seem important enough at this time to require a revision of the agreement. It would, however, have been preferable to state in the Supplemental Agreement that the last three sentences in Par.2 of Article II, Scope of Work, be deleted. These sentences appear at the top of Page 4 of the original agreement of October 10,1963 and begin "for each type the report shall contain a photograph of a colored rendering.....".

The concluding sentence of your letter to us of December 4, 1964 invited a proposal for these additional studies and states: "It will not be necessary, at least at this time, to have perspective renderings prepared." As a consequence thereof our proposal of January 12, 1965 and the lump sum payments of $18,500 contained therein did not include any provision for colored renderings or for photographs that would appear in the report.

If desired by the Department we would, of course, be glad to furnish these at a cost for each rendering of approximately $550 each. We assume that Julian Michele, who prepared the renderings for the original report would prepare additional renderings at a price of $500 per rendering, to which we would add about $50 per rendering to

cover the costs of photographs, plates and reproduction in the report. I would think that if renderings are desired of the new designs, it would be necessary to return one of the originals in order that the background could be copied; otherwise the cost might be higher if the background had to be redrawn.

As previously stated, we believe that there is a clear understanding in regard to this matter and that it would not be necessary to revise the supplementary agreement.

In the meantime, we consider your letter of January 28, 1965 as our authorization to proceed with the additional work; in fact, we have done some work on it prior to the receipt of your letter in order that we may send you within the next few days the necessary data for the additional borings at the cable anchorages for Design S-2. We have also received Mr. Merchant's letter of January 25, 1965 in reply to the questions raised in our letter to him of January 12, 1965 and will be guided accordingly.

It is indeed a pleasure to undertake this additional work on the Fremont Bridge.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

MNQ:Y
w/encls.

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FEB - 4 1965
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WASCO
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PORTLAND

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STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

January 25, 1965

Parsons, Brinckerhoff, Quade
and Douglas
165 Broadway
New York 6, New York

Gentlemen:

Fremont Bridge
Bridge No. 2529

Please refer to your letter of January 12 in which you request information on various items pertaining to the preliminary design of the Fremont Bridge.

Item No. 1 has to do with the use of the orthotropic steel deck plate for the Port Mann type bridge and mentions a light-weight concrete deck for the lower roadway. Because of the additional long span types of structure that are now being studied by you, it is our wish that the decks of all structures except the upper deck of the Port Mann type bridge be of conventional reinforced concrete. It is realized, of course, that the reason light-weight concrete is used in the Port Mann type bridge is to lower the overall cost; however, we do not believe that this bridge should be given preferential treatment over any other long span type at the expense of the serviceability of of the deck wearing surface. Mention is made in your letter of open steel grating. Again, it is our belief and our desire that all roadways be constructed of conventional reinforced concrete.

Item No. 2 requests the State to make additional borings in the anchorage area for the externally anchored suspension bridge. This will be done in the very near future, and the results furnished you for your use.

Item No. 3 requests information on approach alignment at the West end. I am enclosing two copies of our Drawing No. 20570 which indicates the plan and elevation of the West approach in the area in question. Your attention is called to the note on this drawing relative to boat locations. It is our belief that foundation material suitable for anchorage bearing will be obtained at about 25' below the ground surface, and that it would be better to use buried anchorages insofar as possible.

NOTED
P. M. STEPHENSON

Item No. 4 refers to the grade of the upper roadway. Our preliminary work indicated stringers continuous over the floor beams for the upper deck on the main river spans. It would be possible to lower the grade of the upper deck on the main river spans approximately three feet or corresponding to the depth of the longitudinal stringers. However, it is our belief that the grade should be kept as shown because of difficulties which will arise in the approaches on each side where the double deck roadways start to divide.

For the above-mentioned reasons we prefer to keep the roadways parallel and separated by 3½' as indicated previously.

Item No. 5 requests consideration of an orthotropic stiffening girder on the externally anchored suspension bridge. As discussed with you previously we are very much concerned with the type of wearing surface on any orthotropic deck. We realize that the Port Mann Bridge has been under traffic for approximately six months. However, that, in our opinion, is not a sufficient length of time to furnish reasonable assurance that the deck will be maintenance free during its service life. For this reason it is the State's desire that conventional designs be used in the externally anchored suspension bridge with the conventional reinforced concrete deck.

Please advise if there is anything further that we can furnish you in this project to further preliminary study.

Very truly yours,

Ivan D. Merchant
Bridge Engineer

IDM/sm
Enclosure

cc: Mr. P. M. Stephenson

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
NEW YORK • SAN FRANCISCO

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WALTER S. DOUGLAS
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JOHN E. EVERSON
ROBERT H. MEADE
SEYMOUR S. GREENFIELD

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

January 12, 1965

Mr. Ivan D. Merchant
Bridge Engineer
Oregon State Highway Department
Salem, Oregon 97310.

Re: Fremont Bridge - Additional Studies.

Dear Mr. Merchant:

During my visit with you in Portland and Salem last week I discussed with you several items that pertained to the additional studies for the Fremont bridge that will require decision or action by the Department. I am recording herein these items and also including the question raised by Mr. Fiore in his letter dated December 30,1964, to Mr. Porter.

Some of the items are particularly pertinent because we are now dealing in all three additional designs with a long center span where certain economies are much greater than they would be in a shorter main span.

Item 1. Roadway Decks: There has been some discussion of using for the Port Mann type of bridge an orthotropic upper deck and a light weight concrete lower deck. In this type the orthotropic deck is essential to the structural design and the light weight concrete lower deck is intended to save weight and therefore cost. Of course a lighter deck would be economical in any of the three designs that we shall be studying and I would not think that it would be desirable to limit the use of a light weight deck to only the Port Mann type.

In our firm we are not as a rule too enthusiastic about the use of light weight concrete decks. Some of them have resulted in considerable maintenance costs and the results of their use have not been entirely satisfactory in all cases. We believe that it would be entirely satisfactory

to use the open steel grating for the lower deck of all three designs between the main piers. There is no advantage in using steel open grating on the flanking spans since on those spans the additional weight of the concrete deck is beneficial and economical.

Although we do not think that open grating would be acceptable for the upper deck (largely because of the danger to traffic on the lower deck by reason of various objects falling through the openings) we do believe that it would be entirely satisfactory for the lower deck and would save a considerable amount of money. One unique feature of its use on the lower deck is that the open grating would be pretty well protected by a solid deck above and it would never become slippery as a result of rain or sleet.

We realize that you have some open grating installations in the Portland area that are not entirely satisfactory - particularly from the standpoint of their alignment. However, these are not the type that we would propose and we believe that irregularities of alignment can be entirely overcome with the exercise of reasonable care in the erection and welding of the grating. Our experience in the use of open grating has been good and we have a number of long span and movable bridges which have steel open grating on them and are, in our opinion, quite satisfactory. We therefore recommend your consideration of the use of such material for the lower deck between the main piers.

Item 2. Borings at Suspension Bridge Anchorages. It is understood that for the externally anchored suspension bridge design we will prepare preliminary layouts showing the location of the cable anchorages and that the Highway Department will make some borings at these locations. This is particularly important for the southwest anchorage which is beyond the present limits of any boring data which we have received.

Item 3. Girder Approaches. In order for us to determine clearances and possible interference between the cables of the externally anchored suspension bridge, we will need a layout of the girder approaches - particularly at the southwest end of the truss spans. If these girders have not yet been designed, the geometry of the approaches in plan and profile will be sufficient for our use. We can supply for our purposes data pertaining to girder and floor depths.

Item 4. Grade of Upper Roadway. It was noted in connection with our previous studies that it would be possible to lower the grade of the upper roadway by approximately 6 feet across the truss spans. This would be economical because any reduction in the clear opening between decks would result in considerable reduction in the bending stresses under transverse loads in those portions of the truss members that extend between decks. However, it is recognized that this may result in some

problems on the approaches where the upper and lower roadways are separated. You said that you would look into this and would let us know whether we could lower the upper roadway.

Item 5. Use of an Orthotropic Stiffening Girder on the Externally Anchored Suspension Bridge. It is possible that the design of the externally anchored suspension bridge could be improved aesthetically and perhaps from the standpoint of economics by using orthotropic construction for the upper deck. If we find this to be the case, would you want us to do so?

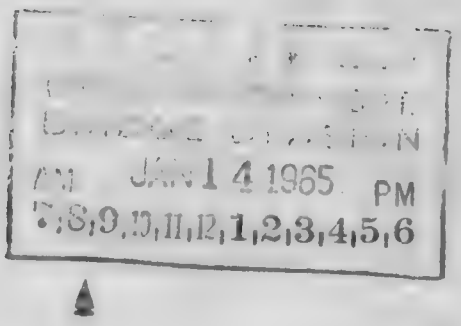
Your reply to the items discussed above will be very much appreciated.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. M. Quade

MMQ:Y



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Sp.

January 8, 1965

AIRMAIL

Mr. M. E. Flora
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York 6, N. Y.

Dear Mr. Flora:

Re: Fremont Bridge - Portland, Oregon

This is in reference to your December 30 letter relative to the Fremont Bridge in Portland and specifically to the preparation of preliminary plans and estimates for three additional designs.

The Federal Bureau of Public Roads has given verbal approval to the proposition and as soon as we have formal approval of a form of supplemental agreement, it will be transmitted to you for your consideration.

We agree that the long span cantilever bridge should be estimated with conventional reinforced concrete decks. We also wish the estimate for the suspension bridge to have the same type of deck. As to the so-called stiffened tied arch, we need an estimate based on the City of Portland's recommendation which included the orthotropic girder layout and the lightweight reinforced deck for the lower level.

If there is anything further needed along this line, please let us know.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms
cc Mr. Forrest Cooper
Mr. P. H. Stephenson
Mr. Victor D. Wolfe

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
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JOHN E. EVERSON

CONSULTANTS
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ROBERT H. MEADE

NOTED
R. L. PORTER

December 30, 1964

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310

Re: Fremont Bridge
Portland, Oregon

Dear Mr. Porter:

In anticipation of receiving approval of our proposal for the additional studies on the Fremont Bridge, we have been doing a little preliminary thinking on the work. It occurs to us that any final selection of designs will take into account, in addition to other factors, the cost as well as the aesthetics of each bridge.

The new studies include a long span cantilever bridge, long span tied arch (Port Mann Type) and a long span suspension bridge. We would plan to use conventional reinforced concrete decks for the cantilever bridge, as we had in all previous studies except the orthotropic girder layout. For the long span tied arch, the instructions are to use an orthotropic deck and box girders for the upper deck and lightweight reinforced concrete for the lower deck. Obviously, one of the reasons for this is to save enough weight so that the construction cost will be reduced.

It occurs to us that the suspension bridge is a type which is also sensitive costwise to changes in dead load. The expensive cables and anchorages are directly affected by the dead load of the span. Therefore, we would like to ask you this question: If during our studies we find that it will be desirable structurally, as well as economically, to use orthotropic construction for one deck and lightweight concrete for the other, would you favor our doing so? Otherwise, we would use conventional reinforced concrete construction for both decks.

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

In closing, may I take this opportunity to wish you personally and your office our best wishes for a Happy New Year.

Very truly yours,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. E. Fiore

M. E. Fiore

MEF:ek

JAN - 1964
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JAN - 6 1965
OREGON
STATE HIGHWAY COMMISSION

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December 4, 1964

AIRMAIL

Mr. N. E. Quade
Parsons, Brinckerhoff, Quade & Douglas
155 Broadway
New York, New York 10006

Dear Mr. Quade:

After about two months of negotiating with various local organizations the Portland City Council has made its recommendation on the Fremont Bridge. The Council has requested the Highway Commission to give consideration to what has been termed as a stiffened tied arch. This is the result of a presentation to various Portland organizations by a representative of C.B.A Engineering, Ltd., of Vancouver, British Columbia, who, I understand, designed and supervised the construction of the Port Mann Bridge across the Fraser River near Vancouver. At the request of the Portland Art Commission, this firm submitted a very preliminary type of report as to its ideas of a Port Mann design at Fremont. A copy of this report is enclosed.

This Department informed the City of Portland that, insofar as possible, consideration would be given to any recommendation the City made. The matter has been discussed with the Federal Bureau of Public Roads and the Bureau has given tentative approval.

It is the desire of this Department that your firm prepare for us a preliminary design and cost estimate of a design similar to the one proposed by C.B.A. Engineering,Ltd., as an additional consideration for the Fremont location. Also, we wish to have another alternate which would consist of a conventional suspension bridge with a main span of 1,135 feet. As a third additional alternate and for comparative purposes, it is desired to have a through cantilever truss with a main span of 1,135 feet.

Will you please advise if your firm could undertake this assignment and, if so, the probable time required. In addition, we will need to know the estimated maximum cost, as we will have to secure formal approval from the Bureau of Public Roads. Please advise us at your earliest convenience as to your availability.

If you can undertake the assignment, I assume that this could be done under a supplement to the previous agreement or, if you prefer, a separate agreement with terms similar to the previous one. It will not be necessary, at least at this time, to have perspective renderings prepared.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:MH
enc.

cc: Mr. Forrest Cooper
Mr. P. H. Stephenson
Mr. Victor D. Wolfe

ALTERNATE PROPOSAL FOR THE FREMONT BRIDGE OVER THE WILLAMETTE RIVER, PORTLAND, OREGON

INTRODUCTION

As a result of a study to select the most suitable type of bridge for a new crossing of the Willamette River at Portland, the New York Consulting firm of Parsons, Brinckerhoff, Quade and Douglas prepared a report for the Oregon State Highway Department. This report was then submitted to the Portland Arts Commission for their consideration. W.S. Storch and Associates of Portland were invited by the Arts Commission to submit an alternate design. The proposal herewith presented has been prepared in collaboration with C.B.A. Engineering Ltd., the designers of the Port Mann Bridge, Vancouver, Canada.

The requirements of the Oregon State Highway Department as outlined in the submission of the New York Consultants have been used as a basis for the alternate design.

DESCRIPTION

Superstructure

Being in complete agreement with Parsons, Brinckerhoff, Quade and Douglas that the main structure should preferably span the river and not interfere with navigation, the design has been based on this requirement.

The proposal shown on the accompanying drawings is for the construction of a stiffened tied arch bridge incorporating an orthotropic deck on the upper level. The lower roadway has a conventional concrete deck and is suspended from the main stiffening girders as shown in Figures 1 and 2.

To meet the required navigation clearances with a structure of this type, the main span would be 1,350 feet and the side spans 395 feet. This makes the main structure 150 feet larger than the similarly designed Port Mann Bridge which was opened in June 1964.

The arch is of slender construction and is designed to sustain compression forces only for vertical loading. The necessary stiffness and load distribution is provided by deep box stiffening girders, the upper flange of which is formed by the orthotropic plate deck. This deck consists of a steel plate supported longitudinally by box

Superstructure (cont'd)

stiffeners placed at 24 inch centres. Transversely, the deck is supported by crossbeams. To achieve economy in design, the lower deck is of lightweight concrete in composite action with crossbeams. These beams are carried by two longitudinal girders suspended by hangers from the main deck. An orthotropic deck is not chosen for the lower level since it does not contribute to the main carrying system.

The arch ribs and lateral bracing are of a welded box shape giving a neat and clean appearance. The hangers are of a welded I section of a minimum width. This is in order to maintain the light appearance of the superstructure where it emerges above the deck levels. All field connections are made with high strength bolts except the splices of the deck panels, where high strength countersunk rivets are employed.

The surfacing of the orthotropic deck would be similar to the system used on the Port Mann Bridge. This system consists of two epoxy coatings to provide the corrosion protection and a 2 inch thickness of asphalt to provide the wearing surface.

In order not to detract from the appearance of the

Superstructure (cont'd)

main arch, the two east approach spans are designed as a steel and concrete deck system supported by Vierendeel girders. Some economy could be achieved if a truss system were used, but the appearance would undoubtedly suffer.

Substructure

Due to the long span, the main foundations are carried well back from the harbour lines. The east pier is located about 150 feet behind the harbour line and is founded on a spread footing at elevation -23. The west pier is about 200 feet back from the harbour line and is supported on steel H-piles. It will not be necessary to use permanent sheet piling and riprap as scour protection. Ample apron space will exist on both banks so that harbour operations will not be interfered with at any time.

The two anchor piers and east approach piers are supported on steel H-piles. The piers themselves are of slender design and comprise twin tapered shafts with horizontal tie beams at the top.

CONSTRUCTION

Due to the piers being located on land, the sub-structures can all be built with land based equipment. This should result in economic foundations.

To ensure that there will be no hindrance to navigation during erection, the main arch should be erected as shown in Figure No. 3. In place of the usual false-work, the contractor would erect the structure by means of a system of temporary cable supports. This enables the erection to proceed by cantilevering to the centre of the main span.

The lower deck is constructed following completion of erection of the main arch.

ESTIMATE OF CONSTRUCTION COSTS

Wherever applicable, the unit prices used in this estimate are those indicated for Design 6 in the New York Consultant's report. Other unit prices have been based on the knowledge and experiences gained from the Port Mann Bridge.

The estimated cost of the substructure is lower than that for Design 6. This is due to the reduction of about 90 feet in the height of the main pier shafts. However, one extra pier has been added to the east approach.

The estimated cost of the superstructure is somewhat higher than that for Design 6. This is mainly caused by the larger span (1,350 feet against 1,135 feet), the cost of which is partly offset by the use of an orthotropic deck design.

Fremont Bridge, Portland, Oregon

ESTIMATED CONSTRUCTION COSTS
STIFFENED TIED ARCH
(Main Span Unit 395' - 1350' - 395')

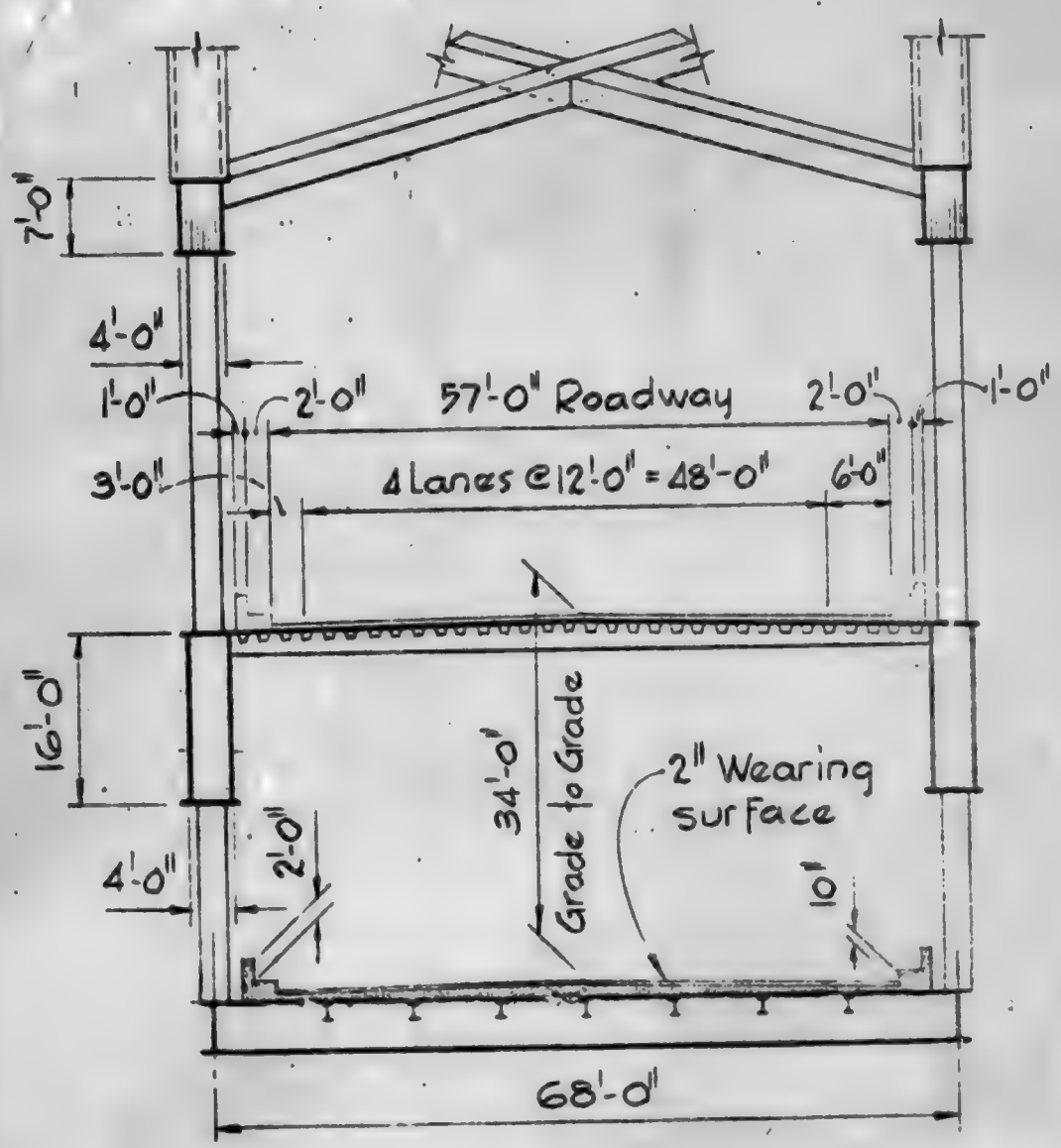
Substructure			
Foundation Excavation	28,300 c.y. @ $ 6.00	=	$ 169,800
Tremie Concrete	8,400 c.y. @ $ 30.00	=	252,000
Footing Concrete	7,750 c.y. @ $ 40.00	=	310,000
Concrete above Footings	11,800 c.y. @ $ 60.00	=	708,000
Reinforcing Steel	1,400,000 lbs. @ $ 0.12	=	168,000
Steel H-Piles	54,100 l.f. @ $ 12.00	=	649,200
Cofferdams	L.S.	=	308,000
	Total	=	$ 2,565,000
Superstructure			
Carbon Steel	7,900,000 lbs. @ $ 0.27	=	$ 2,133,000
Low Allow Steel	1,650,000 lbs. @ $ 0.34	=	5,610,000
High Strength Steel	9,400,000 lbs. @ $ 0.38	=	3,572,000
Epoxy Layers on Steel Deck	15,000 s.y. @ $ 10.00	=	150,000
2" Asphalt Wearing Course	3,640 tons @ $ 12.00	=	43,680
Deck Lightweight Concrete	5,900 c.y. @ $100.00	=	590,000
Reinforcing Steel	1,600,000 lbs. @ 0.12	=	192,000
Bridge Railing	10,220 l.f. @ $ 4.50	=	45,990
Roadway and Navigation Lighting	L.S.		50,330
	Total	=	$12,387,000
	Substructure	=	2,565,000
	Total Cost	=	$14,952,000

CONCLUSION

The designers have attempted to make the lines of the steel arch look graceful and to ensure that the overall appearance will be one of simplicity and spaciousness. The use of welded box girders is moreover favourable with respect to painting and maintenance.

The estimated cost of the structure of $14,952,000. is 4% higher than the recommended proposal of the New York Consultant. In assessing the cost differential, consideration should be given to the additional advantage of having unrestricted terminal space available for harbour operations. A further advantage is the avoidance of need for scour protection.

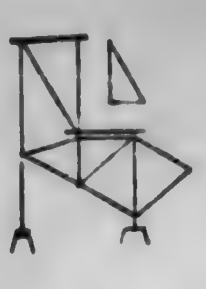
It is felt that the stiffened tied arch-type of structure presents a good technical solution for the proposed crossing. It is contemporary, aesthetically pleasing and generally has a successful precedent at Port Mann.



TYPICAL CROSS-SECTION

Scale: 1" = 20'

FIGURE 2



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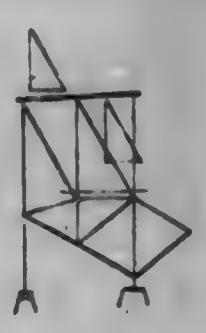

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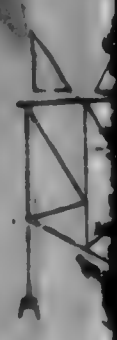

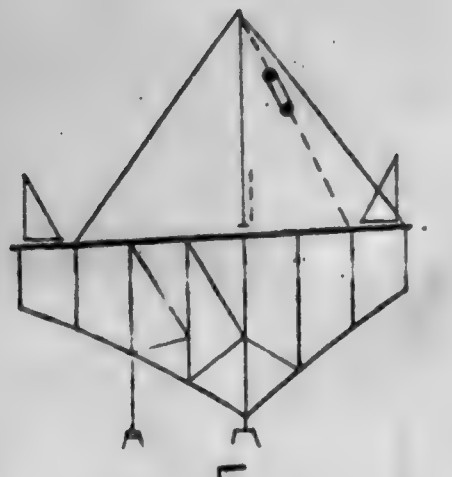

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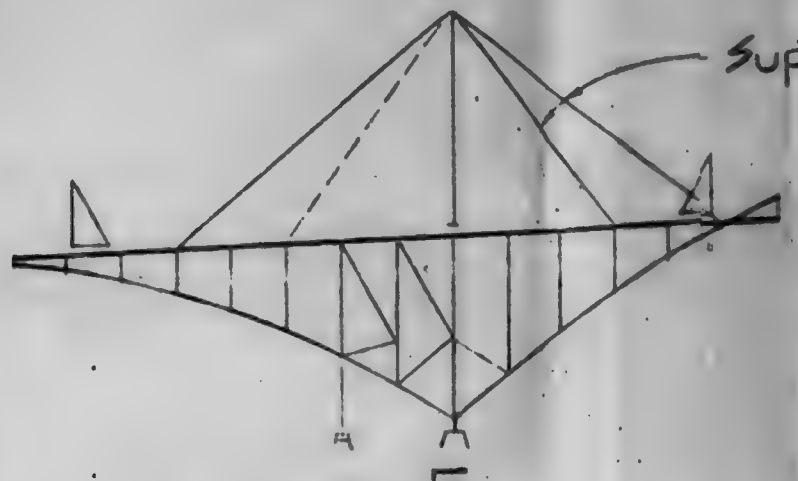

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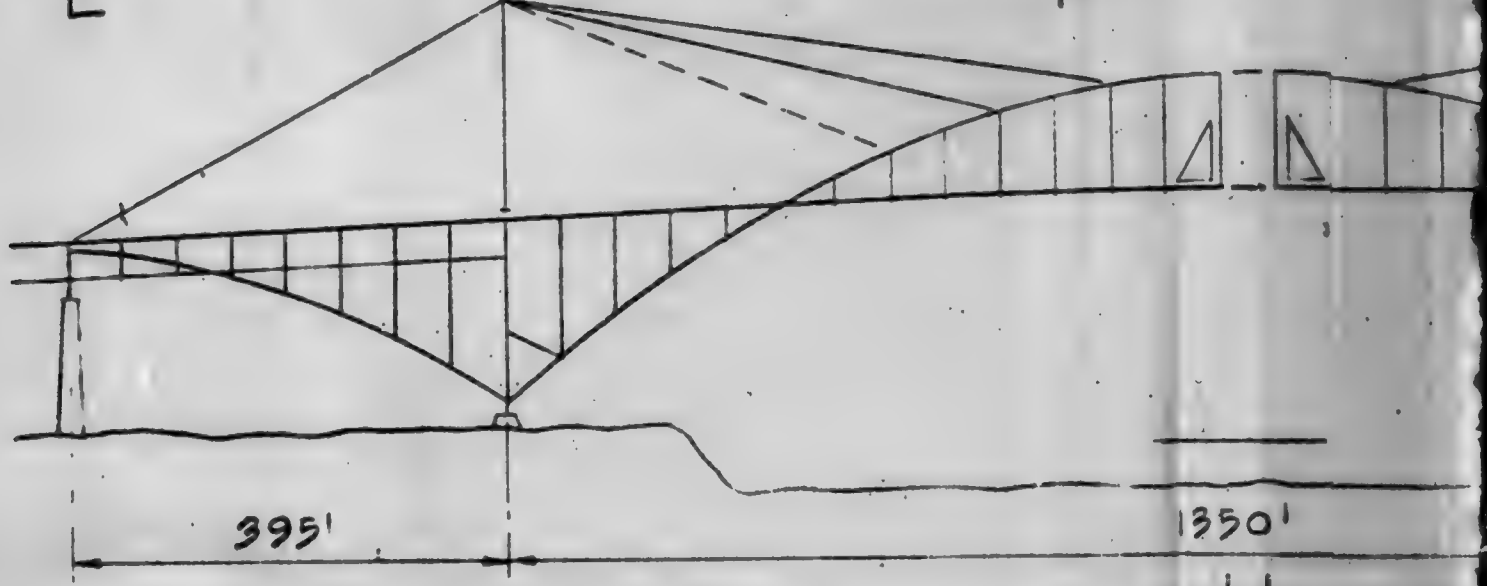

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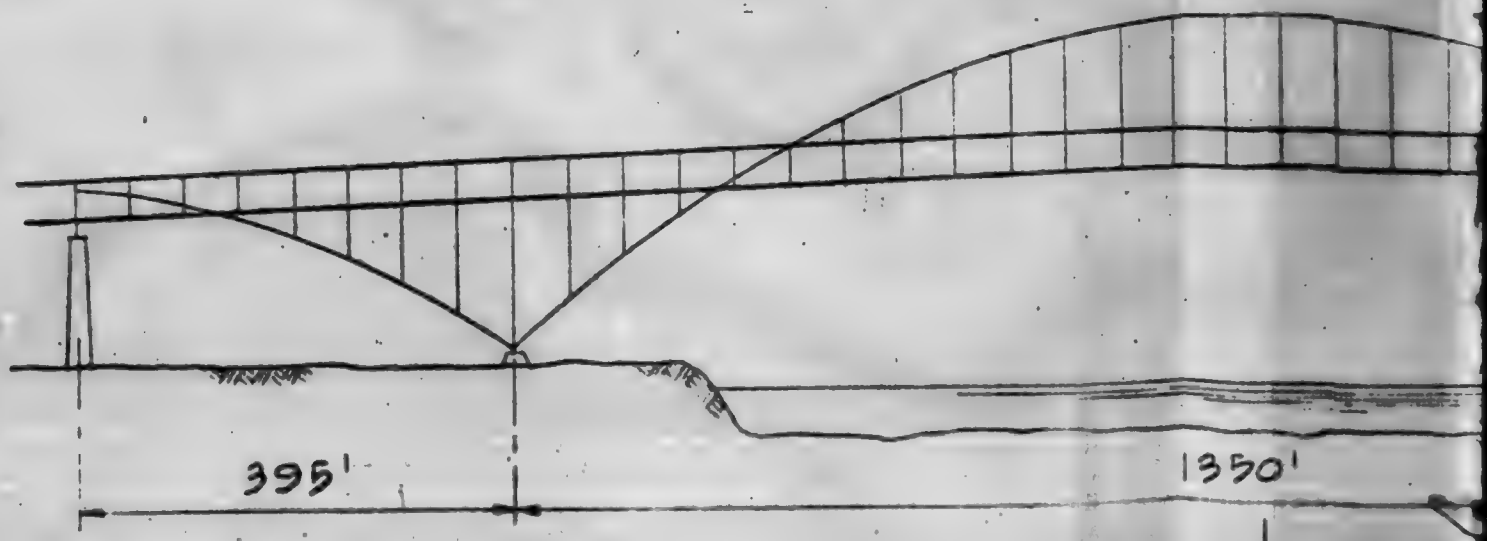

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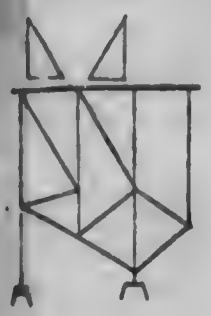
PROPOSED METHOD OF ERECTION FOR



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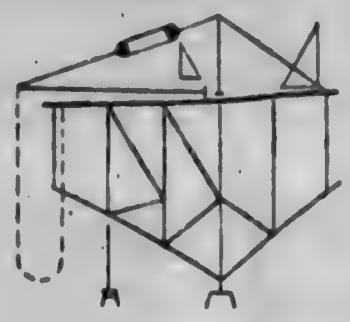

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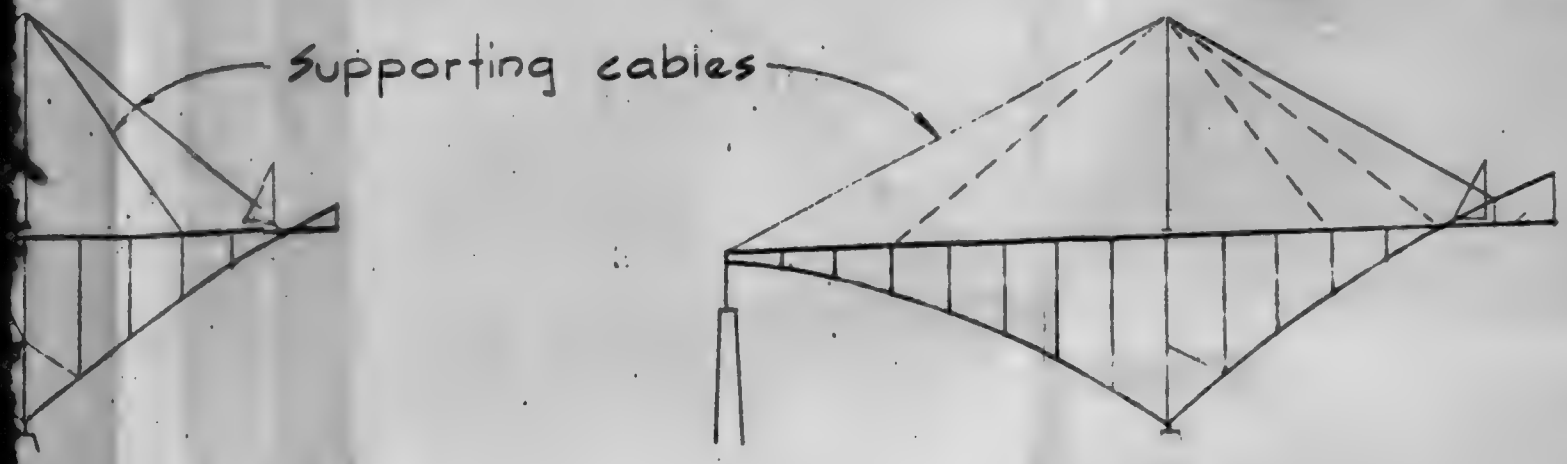

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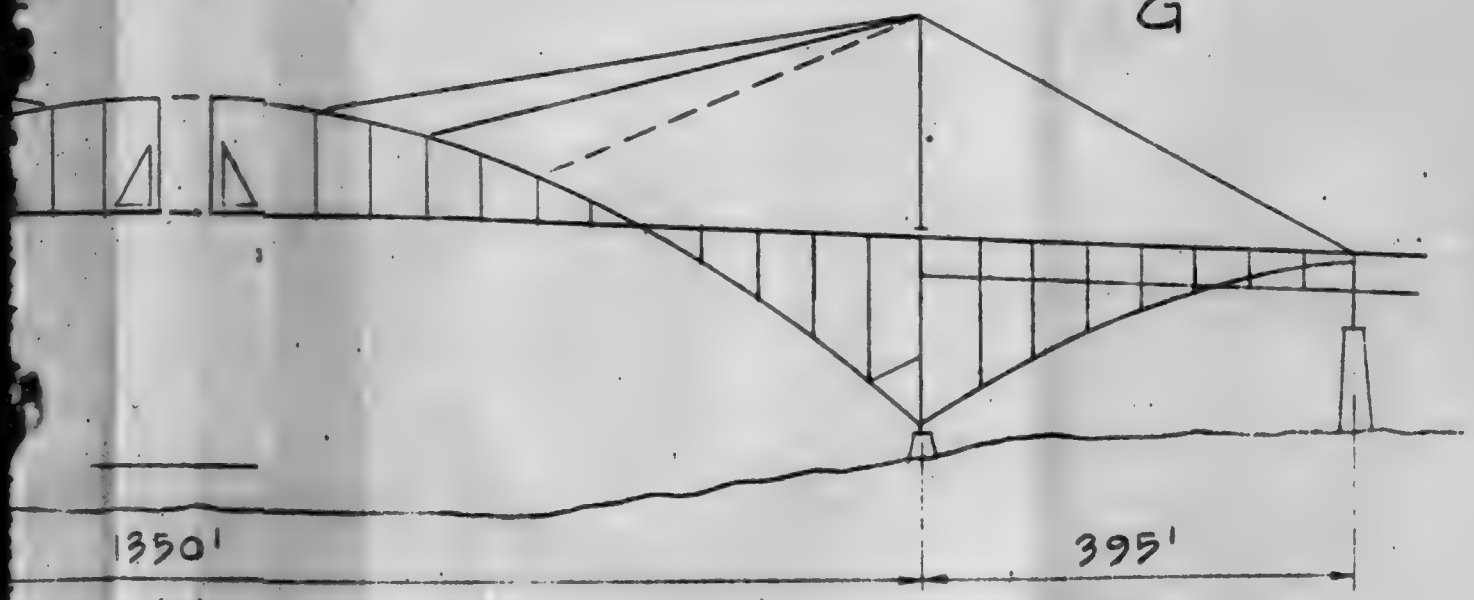

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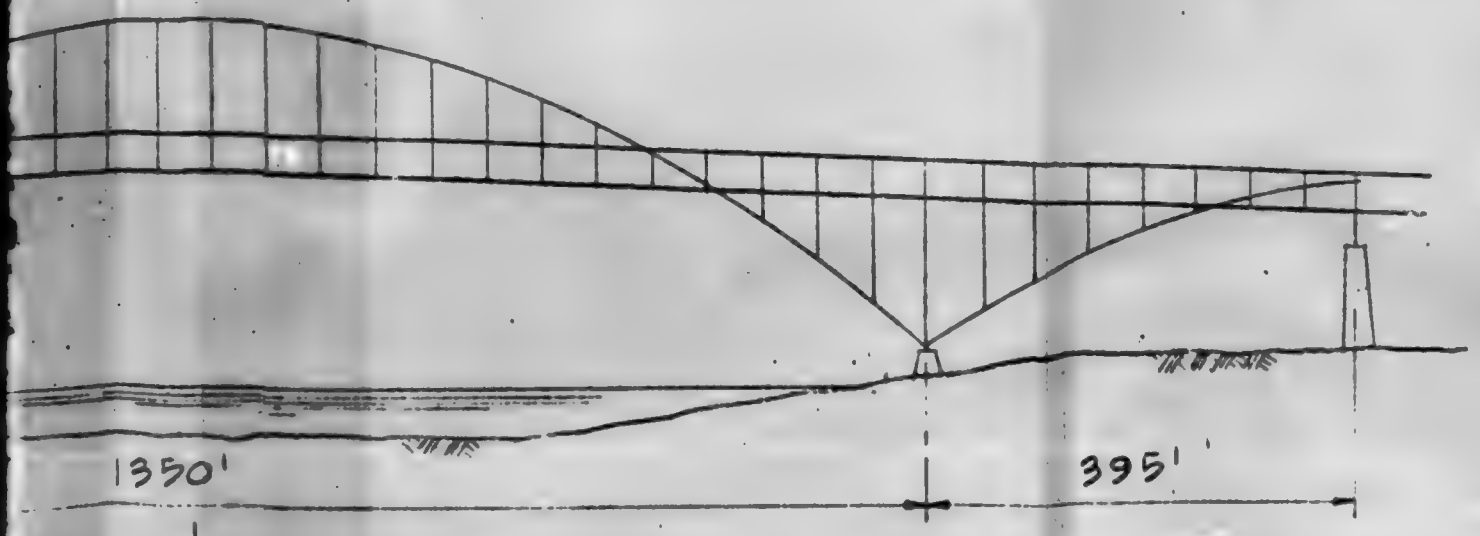

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ECTION FOR THE FREMONT BRIDGE

FIGURE 3

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Sp.

October 29, 1964

Mr. N. S. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York, New York 10006

Dear Mr. Quade:

This will acknowledge receipt of your final billing for engineering and architectural services in connection with the preliminary designs for the Fremont Bridge on Interstate 405 in Portland. The invoice is being handed to our auditors to be placed in line for payment. I believe the Bureau of Public Roads will require some type of audit, which we hope will not delay the matter unduly.

As yet, we have had no indication from the City of Portland as to which design the City prefers. Both the Portland Dock Commission and the Port of Portland have expressed strong preference for the long span each types. As soon as a type selection has been made, we will contact you further.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:MB
cc Mr. Forrest Cooper
Mr. Victor D. Wolfe
cc/att. Mr. C. H. Watson

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
NEW YORK • SAN FRANCISCO

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165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6800

October 27,1964

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem,Oregon 97310.

NOTED
R. L PORTER

Re: Fremont Bridge.

Dear Mr. Porter:

We are enclosing, for your approval and payment, our Invoice No. 192, dated October 26,1964, in the amount of $8,008.16. This covers a small amount of salary charges that have been incurred subsequent to the date of our last invoice and includes payment of the retained fee. This is intended as a final billing under the terms of our agreement.

It will be noted that the total amount billed under this contract is $77,258.75. This is slightly in excess of $10,000 below the ceiling of $87,500.(including the architect's fee of $7500) that is stated in our contract. Part of the saving to the Department is the result of more extensive use of a computer than was originally anticipated.

We await with much interest the word from you in regard to the final selection of a design for this bridge and the opportunity to discuss with you and your staff further services in connection with the project.

Yours very truly,

PARSONS,BRINCKERHOFF,QUADE & DOUGLAS

M. N. Quade

RECEIVED
OCT 28 1964
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
OCT 28 1964
OREGON
STATE HIGHWAY COMMISSION

No. 192

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10, Oregon

TO

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

165 BROADWAY, NEW YORK 6, N. Y.

October 26, 1964

Final Billing

For Engineering and Architectural Services in connection with a preliminary study of the Fremont Street Bridge over the Willamette River in Portland, Oregon in accordance with our agreement dated October 10, 1963.

Salaries of Staff	Hours	Rate	Amount	
From August 1, 1964 to August 28, 1964				
M. E. Fiore	10	8.25	$ 82.50	
M. C. Shedd	38	5.80	220.40	
P. Chao	1	3.25	3.25	$ 306.15
From August 29, 1964 to September 25, 1964				
R. H. Arents	2	3.75	7.50	7.50
		Total Salaries		$ 313.65
		Add: Retained Fees Withheld		7,694.51
		TOTAL AMOUNT DUE		$ 8,008.16

RECEIVED
OCT 14 1964
FOR FILING
I-405-8(17)303
7276

October 13, 1964

Mr. Thomas P. Guerin, General Manager
Portland Public Docks
3070 N. W. Front Avenue
Portland, Oregon 97210

Dear Mr. Guerin:

This is to acknowledge receipt of your October 8 letter stating that the Portland Commission of Public Docks favors Design No. 6 as prepared by Parsons, Brinckerhoff, Quade and Douglas, which is the continuous tied arch with a 1,135-foot span, as its preference for the Fremont Bridge.

The Department appreciates receiving your opinion and we will see that it has the attention of the Highway Commission at the time formal action is taken on this matter.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms
cc: Commissioner Wm. Bowes
bc Mr. Forrest Cooper
Mr. P. H. Stephenson
Mr. Victor D. Wolfe

COMMISSIONERS
Robert J. Rickett
Chairman
Raymond M. Kell
Vice Chairman
Capt. H. T. Shaver
H. B. Cooper
James W. Goodsell
Marshall N. Dana
Honorary Lifetime Commissioner

GENERAL MANAGER
Thomas P. Guerin

OFFICES IN:
Tokyo, Japan
New York, N. Y.
Washington, D. C.

Acknowledge

PORTLAND PUBLIC DOCKS

Operated by The Commission of Public Docks

3070 N.W. FRONT AVENUE • PORTLAND, OREGON 97210
TELEPHONE 228-6231 • TWX 503-224-1982
CABLE ADDRESS: "DOCOM"

October 8, 1964

[illegible]
ORTER

Mr. Glenn Jackson
c/o State Highway Building
Oregon State Highway Commission
Salem, Oregon

Dear Mr. Jackson:

The Commission, at its regular monthly meeting on October 1, 1964, reviewed the various alternates for the Fremont Bridge as portrayed in the State Highway Department report by Parsons, Brinckerhoff, Quade & Douglas, and took official action establishing a position of preference for Design No. 6, Continuous Tied Arch, with a 1,135 foot main span.

The fact that this bridge can be built without obstruction in the main stem of the river for a cost approximating the most economical of all possibilities, was weighed as an element of the decision.

Yours very truly,

Thomas P. Guerin

Thomas P. Guerin
General Manager

TPG:AME:saw

THE PRESIDENT'S "E" AWARD FOR EXPORT SERVICE

RECEIVED
SEP 2 5 1964

Form CD-121
(11-63)
(Pres. by
A.O. 20610)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
477 Cottage Street, N.E.
Salem, Oregon - 97301

I 405-8(17)303

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

DATE: September 24, 1964

In reply refer to: 08-35.EC

7276

FROM : A. W. Parsons, Division Engineer
Salem, Oregon

Sp.

SUBJECT: Oregon P.E. Project I-405-8(1)301
Fremont Bridge

NOTED
R. L. PORTER

We concur in the report previously furnished us as prepared by the consultant firm of Parsons, Brinckerhoff, Quade & Douglas on the Fremont Bridge as requested by Mr. Porter's September 11, 1964 letter.

RECEIVED
SEP 25 1964
OFFICE OF
STATE HIGHWAY ENGINEER

Copy to Mason
9-25-64

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
SEP 15 1964
FOR FILING

Coast
Projects
Muni - Portland
Fremont

Quade

September 11, 1964

Mr. A. W. Parsons
Division Engineer
Bureau of Public Roads
477 Cottage Street, N. E.
Salem, Oregon

Dear Mr. Parsons:

The firm of Parsons, Brinckerhoff, Quade & Douglas has completed its work on the preliminary study for the Fremont Bridge on Interstate Route 405 in Portland.

We are prepared to recommend to the Highway Commission that it accept this report and ask your concurrence therein. Your concurrence is requested on the basis that Mr. Quade will come to Oregon to explain any features of the work at any convenient time, if such is necessary. This will be done at no additional cost to either the Bureau or the State. It is also understood that your concurrence will be subject to final audit.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms

cc Mr. Forrest Cooper
Mr. P. H. Stephenson
Mr. C. H. Maison
Mr. Victor D. Wolfe

RECEIVED
SEP 15 1964
FOR FILING
I-405-8(17)303
2276

September 14, 1964

Ap

Oregon State Highway Commission

Gentlemen:

The firm of Parsons, Brinckerhoff, Quade & Douglas has completed its work on preliminary designs for the Fremont Bridge on Interstate Route 405 in Portland. Copies of this report were furnished to you on August 25. The agreed total cost of this study was not to exceed $26,000 and is subject to final audit. It is anticipated that it will be in the neighborhood of $25,000.

Subject to Bureau of Public Roads concurrence, I recommend that you formally accept this report at the meeting on October 9. This is necessary so that the matter may be concluded with the consultant.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc Floyd Query
R. L. Porter
P. M. Stephenson
Victor D. Wolfe
Ivan Merchant
C. H. Maison

RLP:ms bbc

RECEIVED
SEP 15 1964
FOR FILING

I-405-8(17) 303
7276

Sp.

September 11, 1964

AIRMAIL

Mr. H. H. Quade
Torgeson, Brinckerhoff, Quade & Douglas
165 Broadway
New York, New York 10006

Dear Mr. Quade:

This will acknowledge receipt of your September 8 letter relative to your Invoice No. 097 in connection with the preliminary study for the Fremont Bridge in Portland. The invoice is being placed in line for payment and should be processed in the reasonably near future.

The Department has a meeting with the City of Portland scheduled for September 22 to discuss this subject; however, I believe it might be well that we hold your trip to Oregon in abeyance until we see which way the "wind blows". We are not sure what the reaction of the art interests in Portland will be and until we get some reaction from the designs in your report, we are not entirely certain as to future procedures.

Subject to approval by the Bureau of Public Roads, we will recommend to the Highway Commission that your report be accepted. This will be done at the next regular Commission meeting on October 9.

We will keep you posted from time to time on how the matter progresses with the City and will try to give you ample notice as to when your presence would be most effectual.

Your designs have received much favorable comment from members of this Department and from the Bureau of Public Roads. It is most interesting to listen to the various opinions expressed and some of the designs that I personally felt least desirable seem to please some of our people the most.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

cc Mr. Forrest Cooper
Mr. P. H. Stephenson
Mr. I. D. Marchant
Mr. C. H. Matson
Mr. Victor D. Wolfe

RLP:ms

NOTED
R. L. PORTER

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

ENGINEERS

FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885

NEW YORK • SAN FRANCISCO

MAURICE H. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
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WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

September 8,1964

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem,Oregon 97310.

Re: Fremont Bridge -
Portland, Oregon

Dear Mr. Porter:

We are enclosing our Invoice No. 097 dated September 1, 1964 for services rendered in connection with the above project. This is not a final invoice.

This invoice covers the technical salaries of our staff for the period from July 4,1964 to July 31,1964 and 100% of our lump sum fee as well as the additional item in the amount of $500 for the sixth rendering in color which was authorized by you.

As previously indicated, I will come to Portland to participate in the discussions of this bridge project whenever you set a date for the meeting. This trip isconsidered to be included in the lump sum which is therefore technically not 100% complete. Inasmuch as all invoices have been based on 10% retained fee, we assume that it will be possible for you to authorize payment of the enclosed invoice.

The final invoice, which will be submitted upon your approval and acceptance of the Report, will include a relatively small amount for technical salaries during the month of August plus the 10% retained fee.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

RECEIVED
SEP 10 1964
OFFICE OF
STATE HIGHWAY ENGINEER

:Y
w/encl.

RECEIVED
SEP 10 1964

FOR FILING

I-405-8(17)303
7276

Sp.

No. 097

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10, Oregon

TO

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

165 BROADWAY, NEW YORK 6, N. Y.

September 8, 1964

For Engineering and Architectural Services in connection with a preliminary study of the Fremont Street Bridge over the Willamette River in Portland, Oregon in accordance with our agreement dated October 10, 1963.

Salaries of Staff - See Schedule "A" attached		$ 1,188.30
One (1) Additional Rendering as Authorized		500.00
Total Reimbursable Costs		$ 1,688.30
Lump Sum Fee	$ 55,000.00	
100% Complete as of July 31, 1964		
100% X $55,000. =	$ 55,000.00	
Less: Previous Billings	34,279.85	20,720.15
Total		$ 22,408.45
Less: 10% Retained Fee		2,240.85
AMOUNT DUE		$ 20,167.60

Orig & 3 cc's
to Maison - 9-10-64

SCHEDULE "A"

Salaries of Staff From July 4, 1964 to July 31, 1964	Hours	Rate	Amount
M. E. Fiore	21	$ 7.70	$ 161.70
J. P. Johnson	4	4.80	19.20
M. P. Neshta	30	3.55	106.50
M. C. Shedd	134	5.80	777.20
S. Sherman	4	2.95	11.80
J. Swindlehurst	16	4.15	66.40
G. Vaccaro	7	6.50	45.50
TOTAL SALARIES			$ 1,188.30

RECEIVED
SEP 3 - 1964
FOR FILING

I-405-8(17)303
7276

AP

September 3, 1964

Oregon State Highway Commission

Gentlemen:

After conferring with Chairman Jackson, a meeting has been arranged with the City Council of Portland to be held at the Congress Hotel at 12 noon, Tuesday, September 22. The subject of this meeting will be the proposed designs for the Fremont Bridge.

Mr. Wm. A. Bowes, who is making the arrangements for the City, states that he believes the entire Council will be there and possibly one or two of the City's engineers. The State will be represented by the Highway Commission, Forrest Cooper, R. L. Porter, and P. H. Stephenson.

Very truly yours,

Forrest Cooper
State Highway Engineer

FC:fm

cc R. L. Porter
P. H. Stephenson
Victor D. Wolfe

RECEIVED
AUG 26 1964
FOR FILING

I-405-8(17)303
7276

A

Sp.

August 25, 1964

Oregon State Highway Commission

Library

Gentlemen:

Attached is a copy of the report covering proposed designs for the Fremont Bridge on Interstate 405 in Portland. This report was prepared by the engineering firm of Parsons, Brinckerhoff, Quade & Douglas of New York under terms of our contract.

After you have had an opportunity to review the report, I suggest a meeting with the City Council of Portland. I will be glad to represent the Commission but if you feel that you would like to appear, please let me know. Mr. M. M. Quade and Mr. Max Abramovitz are available to attend this meeting in case they are needed.

Very truly yours,

Forrest Cooper
State Highway Engineer

Enc.

cc R. L. Porter
Victor D. Wolfe

RLP:ms fn

RECEIVED
AUG 12 1964

Form C-0-12 (11-63) (Pres. by A.O. 206-10)

UNITED STATES GOVERNMENT

Memorandum

I-405-8(17)303

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon
ATTENTION: Mr. R. L. Porter

7276

FROM : A. [illegible] Parsons, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-405-8(1)301
Preliminary Study for the Fremont Bridge
Your letter of July 27, 1964

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
477 Cottage Street, N.E.
Salem, Oregon - 97301

DATE: August 10, 1964

In reply refer to: 08-35.6

This will confirm our previous verbal approval for the inclusion of an additional design in the study being made for this structure.

We also concur in the time extension to about August 15 as requested by the consultant in their letter of July 22, 1964.

NOTED
R. L PORTER

RECEIVED
AUG 11 1964
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
AUG 13 1964
FOR FILING

I-405-8(17)303

7276

No. 074

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10, Oregon

TO

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

165 BROADWAY, NEW YORK 6, N. Y.

August 10, 1964

For Engineering and Architectural Services in connection with a preliminary study of the Fremont Street Bridge over the Willamette River in Portland, Oregon in accordance with our agreement dated October 10, 1963.

Salaries of Staff - See Schedule "A" attached	$ 3,456.75
Total Reimbursable Costs	$ 3,456.75

Lump Sum Fee - $ 55,000.00

Percentage of Reimbursable Costs =
$ 3,456.75 ÷ $32,500 = 10.636%
Lump Sum Fee $55,000.00 X 10.636% 5,849.80

Total	$ 9,306.55
Less: 10% Retained Fee	930.65
AMOUNT DUE	$ 8,375.90

Orig. to Mason 8.12.64

RECEIVED
AUG 12 1964
OFFICE OF
STATE HIGHWAY ENGINEER

SCHEDULE "A"

	Hours	Rate	Amount	
Salaries of Staff				
From February 14, 1964 to March 13, 1964				
M. E. Fiore	20	7.70	$ 154.00	$ 154.00

To adjust the time of Mr. M. Fiore which was incorrectly charged during the period ending March 13, 1964 and corrected July 3, 1964.

From June 6, 1963 to July 3, 1964				
M. E. Fiore	19	7.70	$ 146.30	
J. P. Johnson	123	4.80	590.40	
M. P. Neshta	77	3.55	273.35	
R. P. Papp	22	4.20	92.40	
M. C. Shedd	131	5.50	720.50	
S. Sherman	83	2.95	244.85	
J. Swindlehurst	134	4.15	556.10	
G. Vaccaro	10	6.25	62.50	
O. H. Lester	116	3.10	359.60	
A. Peranic	33	3.00	99.00	
V. Sepcenko	52	4.35	226.20	
E. G. Aisiks	1	5.80	5.80	3,377.00
				$ 3,531.00

To deduct prior salary charges for Mr. R. Newsam in accordance with your letter dated 7/17/64.

R. Newsam				
From 3/13/64 to 4/10/64	6	6.75	$ 40.50	
From 4/11/64 to 5/8/64	4	6.75	27.00	
From 5/9/64 to 6/5/64	1	6.75	6.75	74.25
			TOTAL SALARIES	$ 3,456.75

RECEIVED
AUG 11 1964
FOR FILING

I-405-8(17)303
7276

Sp.

August 7, 1964

AIRMAIL

Mr. M. H. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York City, New York 10006

Pier Contract
Copy in 11 & 4

Dear Mr. Quade:

Reference is made to your letter of July 29 in which you discussed the desirability of keeping the side channels closed during the channel pier construction for the proposed Fremont Bridge.

The eastside channel can be closed during the construction of the east channel pier. The westside channel is a different problem as the closure would affect the use of the 100-ton shearleg immediately downstream from the bridge location. The owners of the shearleg (the Commission of Public Docks of Portland) are studying a request to permit a closure for, say, seven months. As soon as we receive their answer, we will inform you.

Referring to your recommendation for the use of open-dredge caissons, we can see no reason for considering other than the conventional open cofferdams of steel sheet piling. Cofferdams of this type have been used successfully several times on both the Willamette and Columbia Rivers to even greater depths of excavation than that proposed for the Fremont Bridge piers. It is not our practice to specify the type of cofferdams contractors shall use to construct piers. Contractors are required to submit cofferdam plans for approval prior to construction.

The proposal in your sixth paragraph is, in our opinion, a prerogative of the contractor. He can either allow the cofferdam to flood or schedule the pier completion before the annual June freshet.

RECEIVED
AUG 11 1964
FOR FILING

I-405-8(17)303
7276

Sp.

Pier Contract
Copy in 7124

August 7, 1964

AIRMAIL

Mr. H. N. Quade
Parsons, Brinckerhoff, Quade & Douglas
166 Broadway
New York City, New York 10006

Dear Mr. Quade:

Reference is made to your letter of July 29 in which you discussed the desirability of keeping the side channels closed during the channel pier construction for the proposed Fremont Bridge.

The eastside channel can be closed during the construction of the east channel pier. The westside channel is a different problem as the closure would affect the use of the 100-ton shearleg immediately downstream from the bridge location. The owners of the shearleg (the Commission of Public Docks of Portland) are studying a request to permit a closure for, say, seven months. As soon as we receive their answer, we will inform you.

Referring to your recommendation for the use of open-dredge caissons, we can see no reason for considering other than the conventional open cofferdams of steel sheet piling. Cofferdams of this type have been used successfully several times on both the Willamette and Columbia Rivers to even greater depths of excavation than that proposed for the Fremont Bridge piers. It is not our practice to specify the type of cofferdams contractors shall use to construct piers. Contractors are required to submit cofferdam plans for approval prior to construction.

The proposal in your sixth paragraph is, in our opinion, a prerogative of the contractor. He can either allow the cofferdam to flood or schedule the pier completion before the annual June freshet.

We agree with the information and your proposals in the remaining paragraphs of your letter.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

P. H. Stephenson
Assistant State Highway Engineer

PHS:hbs

cc R. L. Porter
Forrest Cooper

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
NEW YORK • SAN FRANCISCO

MAURICE N. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE

ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

July 29,1964

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310

Re: Fremont Bridge
Portland, Oregon

Dear Mr. Porter:

This will supplement our letter to you of July 17, 1964 pertaining to the river side channels and the problems involved if they must bekept open at all times during the construction period.

In consultation with Mr. Ralph E. DeSimone, a relative estimate of cost of the river piers used with any design having a 650-ft. main span has been prepared. In one case, the piers have been assumed to be constructed in the river entirely with floating equipment; in the second case, it has been assumed that the same piers would be surrounded by land so that land equipment could be used throughout. The differential cost was found to be about $600,000, the land work being the cheaper.

To construct the river piers with land equipment would require trestles reaching out from each shore and these would cost $200,000. The net saving in cost is therefore $400,000. Your letter of July 22,1964 states that it appears probable that the channel under the easterly span could be closed for as long as twelve months. This is helpful but the westerly channel continues to be a problem for all designs which have a 650-ft. main span. It is no problem for the 1135-ft. main span which looks better each day.

Have you by any chance asked the Port of Portland about the damages that they think they would suffer if 200 ft.of wharf at the bridge

were to be closed off for a period of say seven months? This might prove to be less than the relative cost of construction by water and by land equipment.

In answer to the fourth paragraph of your letter of July 22, we are recommending open-dredge caissons for the bases of the river piers for the 650-ft.main span designs. The caissons would consist of steel boxes filled with concrete except for open wells through which the excavation would be removed by heavy buckets. The bottom is open for dredging until the caisson is sunk to its final elevation after which the bottom section is concreted by tremie methods. The height of the box caisson would be the height of the final base. Since the top of the base must be finally placed one to two feet below the future dredged depth of the river (Elev.-39.2), a temporary cofferdam is required above the top of base for the construction of that portion of the pier shaft which is in the water. This cofferdam is assembled and erected above water as the caisson is sunk and follows it down to final elevation. Hence the term "follower cofferdam". After the shaft is completed to a point above water, the cofferdam is removed.

We do not intend to use cofferdams higher than would be required for a 15-ft. stage of water. If a higher stage should happen to occur, the cofferdam could be allowed to flood without damage. Shaft pours would not be made immediately prior tc an expected flood stage above 15-ft.

Referring to the next to the last paragraph of your letter of July 3,1964 we intend to found the east main pier at elevation -30. Inasmuch as we have shifted both main piers in Design 6, 30-ft. to the west (using span lengths of 500-1135-500 and 420-ft.) the east main pier is now located 74-ft. from the harbor line. The pier base is 80-ft.wide and the front edge is 34-ft. from the easterly limit of dredging to a future depth of elevation -39.2. By leaving the sheeting in place on the river face and the outer half of the two ends - cutting it off one foot above the top of base - and placing a blanket of stone rip-rap between the pier and the harbor line, ample protection against scour will be provided.

You will note from the borings that Hole 4LY was carried to about elevation -30 where drilling was apparently stopped because it became too difficult. Even steel H-piles could not be driven in the stratum indicated by this boring. The material seems quite adequate for a spread footing design but before final design of an 1135-ft.main span bridge would be undertaken, additional and deeper borings will be required at the exact pier site.

The east pier is the fixed pier for 2135-ft. of bridge and it will be required to resist large longitudinal forces from wind or earthquake sources.

The cross-section shown on the Department's drawing No.18934 appears to indicate a quay wall or other form of filled wharf construction at the west bank. When Mr. Fiore and I made our inspection of the site last November we looked under this wharf and noticed that the construction is of the relieving platform type and that the bank behind the river face of the wharf is on a slope (probably 1 on 1) and is faced with rip-rap.

In the revised layout for Design 6 the center line of the west pier will be located 80-ft. back of the harbor line(which seems to coincide with the face of the wharf). The base will be 48-feet wide and will be supported on steel H-piles. The front edge of the base will be 56-ft. back of the harbor line. The base of this pier can be safely founded at elevation -20. As in the case of the east pier we would recommend that the sheeting on 3 sides of the base be left in place and that rip-rap be placed in front of and at the ends of the pier.

At both piers the rip-rap would be placed after the piles supporting the restored section of wharf have been driven.

If Design 6 is adopted, the construction of the west main pier will be entirely clear of ships anchored alongside of the wharf and would permit about 25-ft. clear width of wharf to be available for the ships use.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

MNQ:Y

RECEIVED
JUL 30 1964
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUL 30 1964
OREGON
STATE HIGHWAY COMMISSION

RECEIVED
JUL 23 1964
FOR FILING

I-405-8(17)303

7276

Sp.

copy in 7124 Pier Contract

July 22, 1964

AIRMAIL

Mr. H. H. Quade
Perkins, Brinckerhoff, Quade & Douglas
165 Broadway
New York, New York 10006

Dear Mr. Quade:

This is in answer to your July 17 letter relative to navigational closures at the site of the proposed Fremont Bridge in the city of Portland.

Apparently there is misunderstanding relative to this problem. In order to obtain clarification, our Mr. P. M. Stephenson contacted the Port of Portland on July 20 and obtained the following information.

The channel under the westerly span cannot be blocked to navigation except for relatively short periods of time. This means that barges must be so placed to leave sufficient room for the passage of vessels. We feel that arrangements can be worked out whereby ships can be kept clear of the area during actual steel erection. It appears probable that the channel under the easterly span could be blocked for as long as twelve months. The main channel under the center span must, of course, be kept open for navigation at all times.

We are not familiar with the procedure you recommend as to coincide with follower caffardams. On the Marquam Bridge that is now under construction and which is upstream from the Fremont Bridge site approximately two miles, conventional caffardam construction was used. While we know the Marquam piers are not as large as the proposed Fremont piers, they are 36' x 102' in horizontal dimension. The bottom of the seal was elevation -15', the streambed varies from -21' to -33', with mean low water being at about elevation -3'. At this point it was not necessary to use any systems of guys or heavy

anchors. I believe that 70-foot steel sheet piling were used in the cofferdam. We recognize that there are many points of difference between these two structures but offer the above information for what it may be worth.

The 23 per cent increase in the cost for river piers as compared with shore piers was strictly an "off the cuff" guess. The two contractors who made the guess, however, are experienced in large bridge construction.

If there are any points about this problem that are not clear, please let us know.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms

cc Mr. Forrest Cooper
Mr. P. H. Stephenson
Mr. I. D. Marchant

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
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ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-6300

July 17,1964

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310.

Re: Fremont Bridge -
Portland,Oregon.

Dear Mr. Porter:

We are quite concerned about the comment made in your letter to us of July 3, 1964 that it is necessary that the side channels be kept open. We assume that you mean that they must be kept open at all times.

The side channels pose no problem with respect to the erection of the steel substructure for any of the designs which have been studied except we think that it would be unwise to permit ships to be tied up under the bridge at the time when superstructure steel is being erected immediately over head.

Construction of the piers is, however, another matter. In the designs calling for main piers in the river, the dimensions of the main pier bases will be 69' x 140'. The 60' dimension immediately reduces the clearances at the side channels during the construction of the piers but such reduction is incidental to what we consider to be the main problem.

We have made preliminary designs of these piers as caissons having follower cofferdams within which the pier shafts to a point above the waterline would be constructed. The probable equipment that would be needed to construct each of the main piers would consist of three barge mounted cranes, a floating concrete plant, a cement barge, a sand barge and a barge for coarse aggregates. In addition to the floating equipment heavy anchor lines would have to extend in all four directions from the caissons during the early stages of the excavation in order to anchor it in place until it is sunk deep enough to hold itself into position.

The floating equipment listed above would not be needed all of the

time but at least this much equipment would be needed for the tremie pours and all but one crane would be needed for the shaft pours.

It simply is not possible to assemble all this equipment and operate it on only three sides of the pier, keeping the shore side clear. It seems imperative to us that during construction and for a period of approximately one year the side channels must be closed and available for the contractor's operations.

Even in Design 6 in which the main piers are constructed on the shore, some wharf space will be required if the work is to be done as economically as possible. The bases of these piers are 80' x 115' and here the work would be done entirely within a cofferdam. All of the equipment would be land based equipment but it would be our thought that the contractor would need to bring in sand and coarse aggregate by barge and that space for tying up two barges - one for sand and one for coarse aggregate - should be provided along the wharf in front of the pier. By the same token he might also need a barge for disposal of the excavation if that is the economical method of disposing of it.

The barges would probably be as long as the dimensions of the pier and they would probably be between 30' and 35' wide. Two of them tied alongside of each other would probably project out into the river about 60' to 70'.

The alternative to this would be, of course, to require, if necessary, rail or truck delivery of sand and gravel and removal of the excavated material. This requirement could very easily cost as much as $1.00 per ton more than water delivery.

It therefore seems to us that regardless of whether the main piers are in the river or on land, the side channels should be closed for a period of about one year and that in acquiring right-of-way for the bridge, this right of closure should also be acquired for the construction period.

Your letter also mentioned that two experienced contractors had given their offhand opinion that unit costs for river piers would be about 25% higher than those for comparable shore piers over and above the cofferdam costs. At the moment this differential seems a little bit high to us but we are currently investigating it and have obtained the services of Mr. Ralph DeSimone in this connection. As you may know, Mr. DeSimone is the former President of Merritt,Chapman & Scott Corporation, who is now engaged as a consultant in construction problems.

Construction of the main piers in the river by means of floating equipment would, of course, result in narrowing the main channel due to the amount of floating equipment and the anchor lines that would be necessary - particularly in the case of simultaneous construction of both main piers. Such simultaneous construction - at least in sequential stages - seems quite necessary because of the relative short periods in the year when lower river stages can be expected. To keep the follower cofferdams within reasonable size and design strength, we intend to let them flood whenever the river stage exceeds 15 feet.

The use of trestles between the banks and the main piers in the river, would permit the use of more land equipment and result in substantial reduction in cost.

We had not been aware until we received your letter of a requirement that the side channel be kept open at all times (within, of course, the physical limitations during the construction of the river pier bases). We therefore would appreciate your further comments in the light of the problems that are discussed in this letter.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

MNQ:Y

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OFFICE OF
STATE HIGHWAY ENGINEER

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SALEM

I-405-8(17)303
7276

Sp.

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 10

July 17, 1964

Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York 6, New York

Gentlemen:

We are enclosing our check No. 474851 in the amount of $10,155.65 covering payment on estimate No. 2 for engineering services in connection with the Fremont Street bridge in Portland, Oregon.

Your letter of June 29, 1964, pertaining to our question regarding the hourly rate of pay for Mr. R. W. Newsam, explained that Mr. Newsam is the head of your Architectural Department and that his services were advantageous in discussions with the sub-contractor.

It is my interpretation of the agreement that the lump sum fee of $55,000.00 includes the entire expense for architectural services. It will be satisfactory to us if the amounts charged for Mr. Newsam's services are adjusted on your final estimate.

Very truly yours,

Forrest Cooper
State Highway Engineer

By:

C. H. Maison
Controller

CHM:jm

Enclosure

cc: R. L. Porter

NOTED
LOURER

No. 955

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10, Oregon

TO

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

165 BROADWAY, NEW YORK 6, N. Y.

June 12, 1964

For Engineering and Architectural Services in connection with a preliminary study of the Fremont Street Bridge over the Willamette River in Portland, Oregon in accordance with our agreement dated October 10, 1963.

Salaries of Staff - See Schedule "A" attached	$ 4,191.25
Total Reimbursable Costs	$ 4,191.25
Lump Sum Fee - $ 55,000.00	
Percentage of Reimbursable Costs = $4,191.25 ÷ $32,500.00 = 12.896%	
Lump Sum Fee = $55,000.00 x 12.896% =	7,092.80
Total	$ 11,284.05
Less: 10% Retained Fee	1,128.40
AMOUNT DUE	$ 10,155.65

SCHEDULE A

Salaries of Staff April 11 to May 8, 1964	Hours	Rate	Amount
E. S. Mokray	21	4.25	$ 89.25
R. W. Newsam	4	6.75	27.00
R. H. Arents	9	3.75	33.75
M. E. Fiore	23	7.70	177.10
M. Giampaolo	4	3.60	14.40
J. P. Johnson	48	4.80	230.40
R. P. Papp	94	4.20	394.80
M. C. Shedd	12	5.50	66.00
S. Sherman	24	2.95	70.80
J. Swindlehurst	123	4.15	510.45
G. Vaccaro	26	6.25	162.50
O. H. Lester	72	3.10	223.20
C. H. Yang	160	3.50	560.00
A. Peranic	26	3.00	78.00
V. Sepcenko	128	4.35	556.80
O. K. Klement	90	3.15	283.50
B. Epir	107	3.50	374.50
E. S. Sheiry	16	5.80	92.80
J. Hayes	4	2.90	11.60
P. F. Brautigam	2	5.50	11.00
A. P. Snyder	8	4.60	36.80
A. M. Thom	8	2.50	20.00
S. Steuerman	22	5.80	127.60
C. R. Oliger	9	3.50	31.50
C. F. Min	2	3.75	7.50
Total Salaries			$ 4,191.25

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
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165 BROADWAY, NEW YORK 6, N. Y.
TEL June 29, 1964 3-6300

MAURICE N. GUADE
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JOHN E. EVERSON
ROBERT H. MOORE

CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

Mr. C. H. Maison
Comptroller
Oregon State Highway Department
Salem 10, Oregon.

Re: Fremont Bridge-
Portland, Oregon.

Dear Mr. Maison:

This is a rather belated reply to your letter of May 12, 1964 pertaining to our Invoice No. 873, dated April 22, 1964, in connection with the above project. The head of our Division of Structures, listed as Grade VIII in our proposal, is receiving a salary of $308 per week ($7.70 per hour). He is Mr. M. E. Fiore, who devotes supervisory time to this project. The head of the Bridge Section is Mr. George Vaccaro, who is receiving a salary commensurate with Grade VII as listed in our proposal.

You questioned the $6.75 hourly rate for services performed by Mr. R. W. Newsam. Mr. Newsam is the head of our Architectural Department, and our proposal does not cover his services because we did not anticipate that we would require them at the time that our proposal was submitted. We believed at that time that Mr. Abramovitz under sub-contract would furnish all architectural services. However, during the progress of the work we found it advantageous to utilize a few hours of Mr. Newsam's time at various periods because he is quite familiar with bridge architecture and could render valuable suggestions, as well as participate to advantage in our discussions with Mr. Abramovitz.

If you feel that it is not proper to bill Mr. Newsam's time at the hourly rate which we are paying him, I will be glad to make an appropriate adjustment in future invoices. However, I would like you and Mr. Porter to know of the circumstances. Mr. Newsam had six hours charged to our

previous invoice and four hours charged to our Invoice No.955, which is being submitted to Mr. Porter today. There might be a few more hours that would be charged to future invoices.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. M. Quade

MMQ:Y

cc: Mr. R. L. Porter
Deputy State Highway Engineer.

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JUL 16 1964
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No. 995

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10, Oregon

TO

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

165 BROADWAY, NEW YORK 6, N. Y.

July 8, 1964

For Engineering and Architectural Services in connection with a preliminary study of the Fremont Street Bridge over the Willamette River in Portland, Oregon in accordance with our agreement dated October 10, 1963.

Salaries of Staff - See Schedule "A" attached		$ 4,837.65
	Total Reimbursable Costs	$ 4,837.65
Lump Sum Fee - $ 55,000.00		
Percentage of Reimbursable Costs = $4,837.65 ÷ $32,500.00 = 14.885%		
Lump Sum Fee $55,000.00 X 14.885%		8,186.75
	Total	$ 13,024.40
Less: 10% Retained Fee		1,302.44
	AMOUNT DUE	$ 11,721.96

SCHEDULE A

Salaries of Staff

May 9 to June 5, 1964	Hours	Rate	Amount
E. S. Mokray	6	4.25	$ 25.50
R. W. Newsam	1	6.75	6.75
M. E. Fiore	12	7.70	92.40
M. Giampaolo	1	3.75	3.75
J. P. Johnson	137	4.80	657.60
R. P. Papp	136	4.20	571.20
M. C. Shedd	68	5.50	374.00
J. Swindlehurst	144	4.15	597.60
G. Vaccaro	26	6.25	162.50
O. H. Lester	152	3.10	471.20
C. H. Yang	152	3.50	532.00
A. Peranic	26	3.00	78.00
V. Sepcenko	72	4.35	313.20
B. Epir	141	3.50	493.50
J. J. Verdi	1	6.50	6.50
E. S. Sheiry	4	5.80	23.20
J. Fallotico	44	3.25	143.00
A. P. Snyder	2	4.60	9.20
A. M. Thom	8	2.50	20.00
S. Steuerman	6	5.80	34.80
I. W. Tarshansky	7	4.75	33.25
C. R. Oliger	1	3.50	3.50
R. G. Mezzone	35	1.75	61.25
C. F. Min	33	3.75	123.75
Total Salaries			$ 4,837.65

RECEIVED
JUL 6 1964
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E-1105-8(17)303

7276

Copy in 7/24 Pier Contract

AIRMAIL July 3, 1964

Sp.

Mr. Maurice Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York City 6, New York

Dear Mr. Quade:

This will acknowledge your June 29 letter and the accompanying sketches.

We have studied these sketches and preliminary estimates and see no purpose in proceeding further with Design No. 7, the 1120-foot orthotropic girder. The cost and the present uncertainty of an adequate wearing surface would seem to rule this out. All reports we have to date on experimental work by other organizations on such wearing surfaces leave considerable doubt in our minds as to continuing maintenance costs.

We are quite interested in your Design No. 6, the 1135-foot continuous tied arch, and ask that it be included in the report. While we have a U.S.C.G. permit for the shorter span arrangement with piers in the channel, the clear channel will give a better facility and decrease the hazard both to the structure and to shipping. This design also sets the west end pier far enough back so that there is no interference with the city streets reducing street cost.

Your report may well bring out your doubt of the adequacy of the pier fender and the impracticability of a system independent of the piers without reducing horizontal navigational clearances.

We note your comment on the comparitive cost for river and shore piers. In addition to the quantities involved, allowance must be made for construction difficulties. It is necessary that the side channels be kept open. No trestle can be built from the shore to the piers and transport of men or material would be by barge. There would also

be cantilever erection of the side spans within the harbor lines. We have discussed the matter very generally with two experienced contractors and it was their off-hand opinion the unit cost would be about 25 per cent higher for river piers than for comparable shore piers over and beyond cofferdam costs. You will, of course, make such adjustment of unit cost in the final estimates as you feel justified.

Cost estimates in your report should show your estimate of the contract construction cost exclusive of engineering, right-of-way, railroad rearrangement, and property damage costs. We will evaluate these ourselves for the various schemes in your report.

We have some question as to the founding of the east main pier for the longer spans without piles unless the pier is carried at about -30 which is much deeper than otherwise would be necessary. Final decision need not be made in this report.

We will await your final report before taking the project up with the City of Portland and the Bureau of Public Roads.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

cc Forrest Cooper
Ivan Merchant
PMS

GSP:bbc

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ASSOCIATED CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

165 BROADWAY, NEW YORK, N. Y. 10006
TELEPHONE BEEKMAN 3-8800

NOTED
R. L PORTER

June 29, 1964

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10, Oregon.

Re: Fremont Bridge
Portland, Oregon.

Dear Mr. Porter:

This letter will constitute an interim report on our studies for the Fremont Bridge in Portland. Under separate cover we mailed to you one print each of the following drawings which will be reproduced as illustrations in our final report:

Frontispiece	-	Location Map of the Bridge.
Figure 1	-	Profile Clearances and River Stages.
2	-	Boring Logs.
3	-	Typical Cross-Section - Designs 1,2,3,4 and 6.
4	-	Design 1 - Through Cantilever Main Bridge.
5	-	Design 2 - Continuous Tied Arch Truss, 650 ft. Main Span.
6	-	Design.3 - Self-Anchored Suspension Bridge.
7	-	Design 4 - Single Tied Arch Main Span.
8	-	Typical Cross-Section - Designs 5 and 7.
9	-	Design 5 - Orthotropic Design - 650 ft. Main Span.
10	-	Design 6 - Continuous Tied Arch Truss, 1135-ft. Main Span.
11	-	Design 7 - Orthotropic Design - 1120-ft. Main Span,

In addition we mailed to you one print each of some sketches which show various layouts for Designs 1 and 2, which were studied and evaluated to determine the most economical layout with respect to lengths of anchor and flanking spans within the limits of our studies. Other sketches were developed to the stage necessary to be sure that satisfactory [illegible] anchorages could be designed and erected for Designs 3 and 5. We

have not intended to reproduce these sketches in the final report. The following sketches were mailed to you:

Sketch A. - Design 1A. - Through Cantilever with 260 ft. anchor spans.
B. - Design 1B. - Through Cantilever with 325 ft. anchor spans.
C. - Design 2A. - Continuous Tied Arch with same flanking spans as in 1A.
D. - Design 2B. - Continuous Tied Arch with same flanking spans as in 1B.
E. - Design 3. - Details of Cable Anchorage for Self-Anchored Suspension Bridge.
F. - Design 5. - Joint Details of Orthotropic Design at Upper Level.
G. - Design 5. - Cable Anchorage Details for Orthotropic Design.
H. - Design 5. - Views of Main Piers and Towers-Orthotropic Design.

Our estimates of cost have been prepared to the point where they can be submitted for your preliminary consideration. However, in preparing the estimates for the superstructures we have tentatively used the same unit price for the same kind of steel in all designs - i.e. the same unit price for all main cable steel, another for all fabricated truss steel of the same type,etc. There will be some differences and we are now in the process of refining these estimates after consultation with representatives of two of the larger steel companies.

Similarly, the unit prices for concrete in the substructures do not yet reflect the full difference in cost between construction on land with land based rigs and construction in the river with floating equipment - or alternatively the construction of trestles and working decks to permit land rigs to work in the river. The foregoing comments apply, of course, to the main piers in the river for those designs having 650-ft. main spans versus those which span the entire river and use a 1120-ft. or 1135-ft. main span.

In addition, our costs are only those for construction. We have not added costs of engineering, right-of-way and property damage, relocation of utilities and railroads and other costs. In fact, we are not sure at this time as to whether you wish us to include such costs. If right-of-way and property damages are to be included, we believe that you should furnish them to us because your right-of-way department is in a better position to do so and also because the right-of-way for the truss spans that we are studying is only a part of the right-of-way required for the entire bridge.

The foregoing costs which have thus far been excluded from our totals will not be the same for all Designs but we believe that the differences will not be a significant factor in selecting a design especially in view of the importance that has been given to aesthetics.

On the basis outlined above the following tentative estimates of construction cost have been computed, subject to further refinement as stated:

			Order of Cost
650 ft. Through Cantilever	1	$12,775,000	1
	1A	13,625,000	5
	1B	13,275,000	2
650 ft. Continuous Tied Arch	2	13,475,000	3
	2A	13,675,000	7
	2B	13,550,000	4
650 ft. Self-Anchored Suspension	3	14,050,000	8
650 ft. Tied Arch Main Span	4	13,650,000	6
650 ft. Orthotropic Design	5	14,125,000	10
1135 ft. Continuous Tied Arch	6	14,075,000	9

We have not made an estimate of the 1120 ft. Orthotropic Design and will not do so unless there is some indication from you that you and the Bureau of Public Roads would consider spending as much as $2 Million for aesthetics. If the 1120 ft. Orthotropic Design (7) should bear the same ratio of cost to the 650 ft. Design (5) as the 1135 ft. Continuous Tied Arch Truss Design (6) bears to its 650 ft. Design (2), the cost of the 1120 ft. Orthotropic Design would be about $14,775,000. Design 7 is the one which our architect, Max Abramovitz, considers the best looking design. Like most architects who pass judgment on bridge designs, he dislikes triangular truss framing. We might add that the double deck construction and the heavy parallel lines and shadows which result from it have made this a very special problem in appearance as well as in structural design.

As could have been anticipated, the conventional through cantilever is the least costly.

Three different layouts were studied. Normally, anchor spans having a length of about three-eighths of the main span length are most economical from the standpoint of the quantities of steel between anchor piers. There is always uplift at the anchor pier and therefore no reversal of stress and uneconomical top chords at the ends due to reversal. This economy is always true if the flanking approach spans can be girders. However, the extreme height of this bridge, the double deck construction and the need for truss spans adjacent to the anchor spans to clear the railroad tracks, more than cancelled out the economy in the cantilever bridge itself. Layout 1A using 260 ft. anchor spans ranked fifth in total cost. Using anchor spans lengths 50% of the main span for Layout 1B

resulted in a design that ranked second but it is still more costly than Design 1 which employs 455 ft. anchor spans. Similar relative economy was found in Designs 2, 2A and 2B for the continuous tied arch trusses.

For those Designs employing 650 ft. main spans with piers in the river, we have used the type of fenders described in your letter to us of September 10, 1963 but we have some misgivings about their adequacy because of the docking operations by cargo ships between each main pier and the adjacent wharf. We have, of course, provided a solid diaphragm between pier shafts to an elevation about 30 ft. above high water but a ship striking either pier can do considerable damage to it in the absence of heavy dolphins at the downstream and upstream ends.

To anyone but a bridge engineer, it is probable that the through cantilever bridge is the least attractive in appearance. We in this firm like the continuous tied arch truss design which is estimated to cost $700,000 more than the through cantilever. It is particularly significant that the 1135 ft. continuous tied arch layout costs only $600,000 more than the 650-ft. continuous tied arch layout on our present basis of estimating as previously described. Refinement of the estimates may narrow this gap. We believe that serious consideration should be given to Design 6, the 1135 ft. continuous tied arch layout. The elimination of floating equipment and all hazards to and from water-borne traffic during and after construction, is an important consideration. The difference in cost between the layouts having 650-ft. and 1135-ft. main spans might depend more on how the contractors who bid it evaluate the hazards of river construction as compared to building the piers on the river banks.

Despite the fact that we believe that Design 6, having a 1135-ft. main span is a very pleasing design having many other advantages as well, we have not included this Design among the five renderings to be prepared. Since this design departs from the original criteria governing our studies, we think that we would need your specific authorization to include it.

It is quite clear that the superstructure steel in Designs 1,2 and 6 can be erected without falsework bents between the main piers. For Design 6 this means no falsework anywhere in the river. Erection of the main span would probably be done by creeper travellers moving out on the top chords. At present we believe that the other designs can also be erected without falsework between the main piers. However, special problems are present. Those designs having cables, 3, 5 and 7, will require considerable adjustment during erection - perhaps several times at the same points for some of the designs.

The Single Tied Arch Main Span (Design 4) can be erected without falsework in the river by means of tie-backs and the addition of a considerable amount of temporary erection steel on both sides of the main span.

Careful review of the borings has led us to conclude that the best design for the main pier base for the layouts having a 650-ft. main span consists of an open-dredge caisson for each pier rather than cofferdams within which Steel H-piles would be driven. The pier shafts extending from the bed of the river would be constructed in the dry within a follower cofferdam on top of the caisson which would be removed after construction. In order to preserve the required navigation clearances it is necessary to place the tops of the bases for the main piers for the 650-ft. main span designs at or slightly below project depth in the river. Under any design basis this places the bottoms at such a depth that they would be founded on firm material. It is highly questionable whether even Steel H-piles could be driven very far below the bases at design depth.

Pier bases on land for the 1120 and 1135 foot main span designs (6 and 7) would be constructed within cofferdams with the bases at a much higher elevation than those in the river for the 650-ft. main span designs. This is the main reason for the relatively small difference in cost for the much longer main span. For these layouts the west main pier would be supported on Steel H-piles. Piles are not considered necessary for the east main pier on the basis of present boring information. It is probable that Design 6 could be constructed in a period several months shorter than the other designs. We might mention that Figure 1 showing all clearances and water elevations has been prepared in order that these dimensions need not be repeated for each design. This leaves the line drawings for the elevations of the several designs quite free from dimensions so that they can be compared more effectively.

Some difficulties have been encountered in completing the 5 renderings. Julian Michele who is doing the work for us had some prior commitments which conflicted with our delayed schedule. He does not expect to have them finished before July 20. The background work which serves for all five has, however, been completed.

We need a little time to refine our estimates and with the text of our report and perhaps a week to print it. All together it looks like a completion date near August 1. In the meantime we would appreciate your comments on the illustrations (Figures 1 through 11) and on any other points discussed in this letter.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

MNQ:Y

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MAY 14 1964
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COMMISSIONERS
R. L. PORTER, CHAIRMAN
MEDFORD
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PORTLAND
FLOYD QUERY, SECRETARY
SALEM

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 10

NOTED
R. L PORTER

May 12, 1964

I-405-8(17)303
7276

Parsons, Brinckerhoff, Quade and Douglas
165 Broadway
New York 6, New York

Gentlemen:

The enclosed check No. 429305 in the amount of $18,829.48 represents payment for progress estimate No. 1 for engineering services in connection with a preliminary study of the Fremont Street Bridge in Portland, Oregon.

In auditing your invoice, it was noticed that we were billed at the rate of $6.75 per hour for services performed by Mr. R. W. Newsom. It is assumed that Mr. Newsom is the head of your Bridge Division a grade VII. In accordance with the agreement, the maximum pay scale of this grade is $250.00 per week or $6.25 per hour. Will you kindly make an adjustment on your next progress billing.

Very truly yours,

Forrest Cooper
State Highway Engineer

By:
C. H. Maison
Controller

CHM:jc

Enclosure

cc: R. L. Porter

RECEIVED
MAY 13 1964
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAY 8 - 1964
FOR FILING

I-405-8(17)303
7276

May 6, 1964

Ap.

Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York City 6, New York

Attention: Maurice Quade

Gentlemen:

Re: Fremont Bridge
Portland, Oregon

This is in reply to your letters of April 30 and May 1.

The material in the stream bed and the current conditions at the site of the Fremont Bridge are about the same throughout the Portland harbor. The gravels increase in size slightly the farther upstream one goes. At the Marquam Bridge, which is the only one now administered by the Highway Department, all piers are on piles. The bottom of the foundations (bottom of seals) varies from 15 feet to 40 feet below original stream bed. Piers were built in 1962 and have gone through the spring floods of 1963. There has been minor scour at four piers and at one point at the upstream end of one pier a local scour 10 feet deep has developed.

The Ross Island Bridge is the farthurest upstream of the bridges in the harbor area. All piers are on piles. The west main pier scoured 14 to 16 feet in 1958 due to a submerged drift jam. Scour was under the pier base 8 to 10 feet. Riprap was placed which has held since placing.

Several piers of the Hawthorne Bridge have developed scour up to 15 feet below the original stream bed. Riprap has been placed which seems to have controlled the scour.

Riprap was placed around piers at the new Morrison Street Bridge and no appreciable trouble has developed. All piers are on piles.

The Steel Bridge, carrying the railroad, is the only bridge not on piles. The main piers are founded at -122 feet but the stream bed is at -90 feet near one of these piers. The railroad records do not show any scour or protective measures. There is no record of any trouble at the Broadway Bridge.

Most of the serious scour has been associated with drift lodging against the piers, causing eddy currents. This must be anticipated in the Portland harbor. Floods that cause scour are due to winter or spring runoff in the Willamette River. These may occur from November until March. The magnitude of these floods has been greatly decreased by flood control dams in recent years. The May-June high water comes from backwater from the Columbia River and the Willamette River current velocities are low. All this adds up to a conclusion that scour must be anticipated in the Willamette River and that it can be adequately controlled by riprap. Pile supports are advisable as a safety measure.

We have discussed the matter of constructing falsework in the 650-foot main span of the Fremont Bridge with the Corps of Engineers and with the river pilots. The Engineers will go along with the pilots. The pilots will probably not oppose if additional navigation costs are assumed by the State. There are about 330 ship movements a year in this part of the harbor that would require one of the large tugs to assist in handling the ship. The estimated cost per incident is $100, a cost of from $30,000 to $35,000 per year. There is also the possibility of responsibility for damages in case of accident which might be assessed against the State if we should assume the added handling costs. It would seem that falsework in the main span should be avoided if practical. We do not anticipate any difficulty from construction equipment in the side span channels.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

cc Forrest Cooper
P. M. Stephenson
Ivan Merchant

GSP:bbc

NOTED
C. S. PAXSON

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK 6, N. Y.
TELEPHONE BEEKMAN 3-6300

May 1,1964

MAURICE H. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE

CONSULTANTS
JOHN O. SICKEL
EUGENE L. MACDONALD

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10, Oregon.

Re: Fremont Bridge -
Portland, Oregon.

Dear Mr. Porter:

One of the important problems in connection with the preliminary studies of the various layouts for the Fremont Bridge is that of erection of the superstructure. This is an important item because of the cost and because of the necessity of finding a method of doing it for each of the several designs.

The through cantilever design causes no problems. The main span across the River can be cantilevered from both sides without falsework bents between the main piers and closed at the center. This erection procedure is quite conventional and has been done many times.

It seems quite evident that the arch-type cantilever can be erected in a similar manner and will not require falsework between the main piers. Although we have not completed our investigation of the fifth design, developed in close collaboration with the architect, we think that it could also be erected without falsework between the main piers.

The erection of the main channel spans of the self-anchored suspension bridge and the thin ribbed tied arch may require falsework in the main channel. We are now determining whether the trusses between the upper and lower decks can be cantilevered from each main pier, and closed at the center to support themselves during the erection of the rib in the

tied arch or the cables in the self-anchored suspension span. If this can be done, then no falsework between the main piers will be necessary. If it can not be done at reasonable cost for temporary erection material, then it would be necessary to attempt to obtain appoval from the Corps of Engineers for two falsework bents in the channel, probably located at approximately the quarter points of the main span.

Of course, such erection bents are not only expensive but they constitute a hazard that we would like to avoid. On the other hand, the clear channel that would be maintained between bents would be significantly wider than clear channels at the Broadway and other movable bridges in the River.

We intend to discuss some of these erection problems with one or both of the principal steel fabricators to get their views on the problem, but before doing so, we would like to know what the attitude of the Corps of Engineers might be towards falsework in the River. Would you want to take this up with the Portland District Engineer's office, or would you prefer that we do so by letter?

During the construction of the main piers, the space between the pier and wharf on each side will be needed for contractors' floating equipment and working platforms. In addition, it is likely that any of the designs will require temporary erection bents near the edges of the two wharves. It thus seems rather evident that ships would not be able to tie up alongside of the wharves opposite the bridge during most of the construction period. We assume that this situation will be recognized in acquiring right-of-way for the bridge.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

MNQ:Y

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MAY 4 1964
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAY - 4 1964
STATE HIGHWAY COMMISSION

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK 6, N. Y.
TELEPHONE BEEKMAN 3-6200

April 30,1964

MAURICE N. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE

CONSULTANTS
JOHN O BICKEL
EUGENE L. MACDONALD

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10,Oregon.

Re: Fremont Bridge - Portland, Oregon

Dear Mr. Porter:

In considering the preliminary designs for the main piers of the Fremont Bridge, the question of potential scour can not be overlooked. We feel quite confident that the conditions in the Willamette River are nowhere near comparable to those in the Columbia River at Astoria, and that there is no serious problem of scour around such large piers as will be needed to support the main span of this crossing.

In view of the navigation clearances required on both sides of each main pier, it will be necessary to place the top of the pier base at or slightly below the river bed. In our opinion, cofferdam construction with a tremie seal on top of which would be placed a distribution slab poured in the dry, is clearly indicated as the most satisfactory method of construction. For the main pier on the southwest side of the channel, the top of the base would be approximately at elevation - 38, and the bottom of the base would be somewhere between elevation -65 and elevation -70. The steel sheet piling would extend 10 feet below the bottom of the base for a toe hold.

Despite the 30-foot fluctuation in the river levels it does not appear to us that there could be any serious problems of scour either before or after construction. As a matter of fact, we have a feeling that the water levels in the Willamette River at this point are governed mainly by the levels in the Columbia River, and hence the

NOTED
R. L. PORTER

extreme high water is more the result of backwater than it is the result of flood flows in the Willamette.

However, the best evidence of this would be determined by any observed scour at the piers supporting other bridges in the vicinity and it would be appreciated if you would let us know whether any significant amount of scour has occurred at those bridge piers.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

MNQ:Y

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MAY 1 1964
OFFICE OF
STATE HIGHWAY ENGINEER

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MAY - 1 1964
OREGON
STATE HIGHWAY COMMISSION

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APR 27 1964
FOR FILING

I-405-8(17)303
7276

April 24, 1964

Mr. H. H. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York 6, New York

Dear Mr. Quade:

Reference is made to your April 17 request to extend the completion time for the Fremont Bridge study, Oregon Federal-aid Project I-405-8(1)301, to July 1, 1964.

This is to advise that the State Highway Commission has approved your request and the Federal Bureau of Public Roads has concurred in the extension.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Foster
Deputy State Highway Engineer

RLFoss

cc Mr. Forrest Cooper
Mr. P. M. Stephenson
Mr. I. D. Marchant

FORM CD-121 (3-63-63)
(PRES. BY A.O. 300-10)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
477 Cottage Street, N.E.
Salem, Oregon - 97301

HOTEL R. L. PORTER

TO : Mr. Forrest Cooper, State Highway Engr.
Salem, Oregon

DATE: April 22, 1964

FROM : A. W. Parsons, Division Engineer
08-35.6 Salem, Oregon

SUBJECT: Oregon Project I-405-8(1)301
Preliminary Study for the Fremont Bridge

With reference to your letter of April 20, 1964, we concur with your recommendation that the time for completion of the study by Parsons, Brinckerhoff, Quade and Douglas be extended to July 1.

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STATE HIGHWAY ENGINEER

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APR 10 1964
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I-405-8(17) 303
7276

April 8, 1964

Mr. M. M. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York 6, New York

Dear Mr. Quade:

I am attaching hereto a copy of a letter from Mr. E. L. Erickson, Chief of the Bridge Division for the Bureau of Public Roads, having to do with the orthotropic plate girder bridge decks.

The proposed Fremont Bridge will undoubtedly be a Federal-aid job and I would suggest in estimating our orthotropic design that consideration be given to orthotropic deck treatment.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

O. S. Paxson
Deputy State Highway Engineer
(Retired)

GSP:ld
Attachment

cc Forrest Cooper
R. L. Porter
I. D. Merchant

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
WASHINGTON, D.C. 20235

April 3, 1964

IN REPLY REFER TO:

32-42

Mr. Glenn S. Paxson
Deputy State Highway Engineer (Retired)
State Highway Department
Salem, Oregon

Dear Glenn:

Receipt is acknowledged of your letter of March 23 discussing deck surfacings for an orthotropic bridge deck which is being considered for the Fremont Bridge over the Willamette River in Portland, Oregon.

The experimental bridge at Troy, Illinois, has now been in service and under observation for quite some time. However, the experience gained from the behavior of various surfacings on this structure has not yet indicated that an asphalt surfacing mix has been designed which does not crack under moderately heavy truck traffic. There appears to be a definite connection between cracking and the localized deflection of the deck plate as related to the stiffer supporting members.

With reference to the Poplar Street bridge itself, the floor plate thickness will be increased and the longitudinal plate stiffeners will be increased in depth over and above theoretical requirements to minimize the localized deflections of the plate and cracking of the asphalt surfacing.

However, it is my opinion that it will be very difficult to provide satisfactory protection for the steel deck plate without a vapor barrier between the plate and the asphalt surfacing. I have, therefore, proposed that a three-ply membrane waterproof be placed directly on the steel deck plate. Whether or not this will be the final solution is not yet determined.

The State of Rhode Island has for some time successfully used a fiber glass fabric as membrane in their waterproofing application. The necessity for drains through the membrane waterproofing to dispose of water collecting between the asphalt wearing surface and the waterproofing is being stressed by the State.

For comparative estimates, it is suggested that metalizing, a three-ply waterproofing utilizing fiber glass and a 2-1/2 in. to 3 in. asphalt wearing surface be considered.

I will be glad to keep you informed of further developments of the surfacing for the Poplar Street Bridge deck.

Very truly yours,

H. L. Erickson, Chief
Bridge Division, Engineering & Operations

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7276

April 7, 1964

Mr. H. H. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York 6, N. Y.

Dear Mr. Quade:

Re: Fremont Bridge
Portland, Oregon

In compliance with your request of March 26, we are enclosing a set of 20 photographs covering the Fremont Bridge area. The State's photographer followed your instructions as close as he could but inasmuch as foreground objects seem to be prevalent in some of the views, he took the liberty of submitting a number of additions. Prints marked 191-27, 191-29, 191-31, and 191-32 are aerial views that were taken at an approximate altitude of 800 feet. We are unable to determine at which heights the previous photographs submitted to you were taken.

The approximate camera positions and elevations used in the four additional photographs are as indicated on the attached sketch.

Very truly yours,

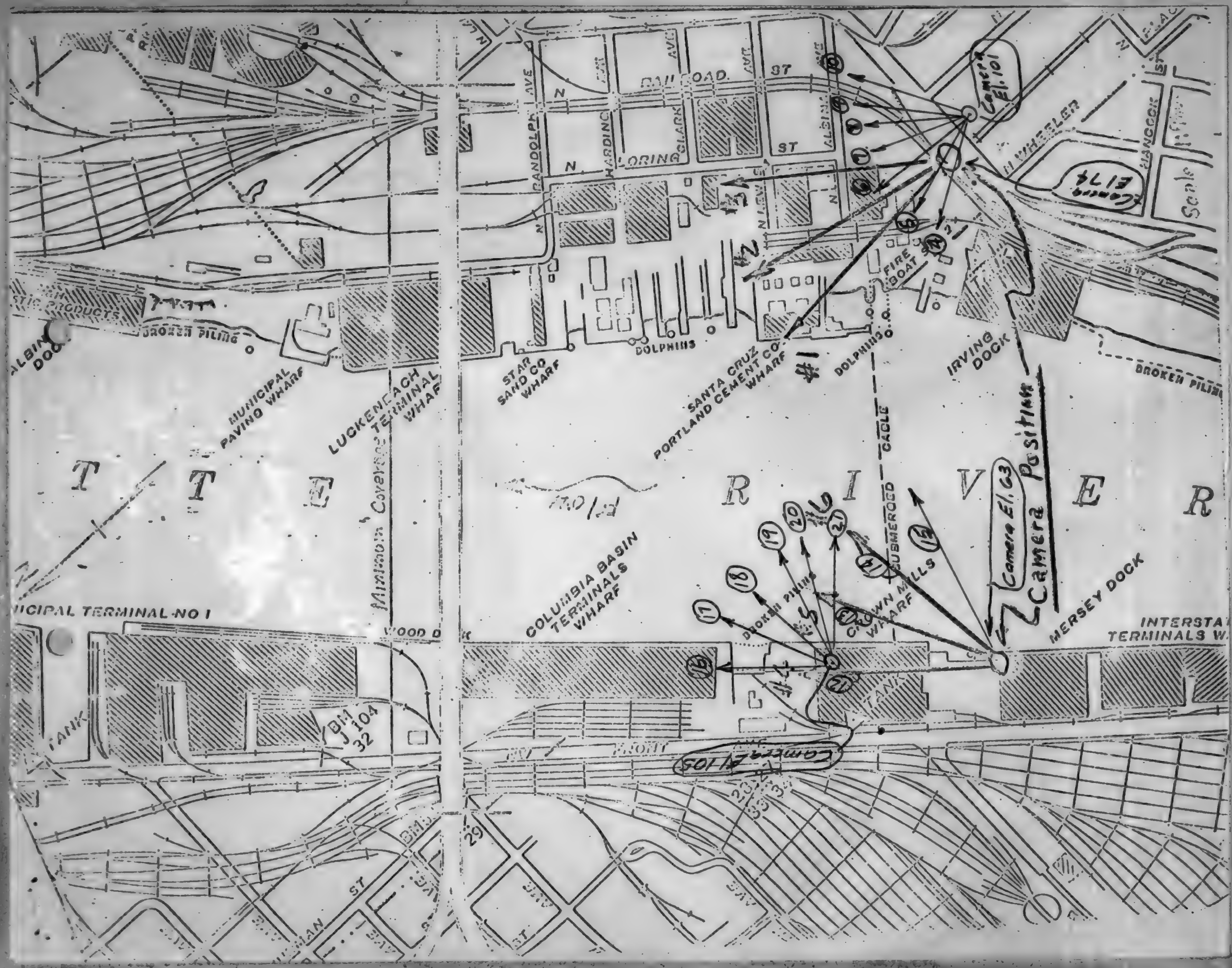
Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms
encs. -24

cc Mr. Forrest Cooper
Mr. P. H. Stephenson
Mr. I. D. Merchant


RAILROAD
BROKEN PILING
MUNICIPAL PAVING WHARF
LUCKENBACH TERMINAL WHARF
STAR SAND CO WHARF
DOLPHINS
SANTA CRUZ PORTLAND CEMENT CO WHARF
FIRE BOAT
IRVING DOCK
CABLE
SUBMERGED
COLUMBIA BASIN TERMINALS WHARF
CROWN MILLS WHARF
MERSEY DOCK
Camera El. 63
Camera Position
Camera El. 105
Camera El. 174
Camera El. 101
TANK
FRONT
RIVER
N. WHEELER
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AVE

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK 6, N. Y.
TELEPHONE BEEKMAN 3-6300

March 26,1964

MAURICE N. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE

CONSULTANTS
JOHN O BICKEL
EUGENE L. MACDONALD

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10, Oregon.

Re: Fremont Bridge
Portland,Oregon.

Dear Mr. Porter:

We have retained Mr. Julian Michele to do the renderings for the Fremont Bridge. After having made a couple of quick sketches, using the photographs you sent us for the background, he asked if it would be possible for us to get him six additional photographs taken from the position he would like to draw the structures. He indicated on the enclosed Xerox copy of the Street Map the two camera positions from which each of three pictures would be taken. On the west side of the river, the photographer would be standing on the roof of the Mersey Dock Building and on the east side of the river, the highway structure over Wheeler Place. The general direction the camera should be aimed and the desired extent of photographic coverage of the bridge site is also indicated.

191-27
-29
-31
-32
AERIAL

If it is at all possible to find out, Mr. Michele would like to know the elevation at which the plane was flying at the time the series of photographs you sent us, numbered 163-41 through 163-49 and dated March 29, 1962, were taken. Mr.Michele would also want to know the approximate elevation of the camera for the new pictures described above. The size of the prints should be 8" x 10".

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

MNQ:Y
w/encl.

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MAR 30 1964
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STATE HIGHWAY ENGINEER

BOSTON TRENTON PITTSBURGH BATON ROUGE SAN FRANCISCO

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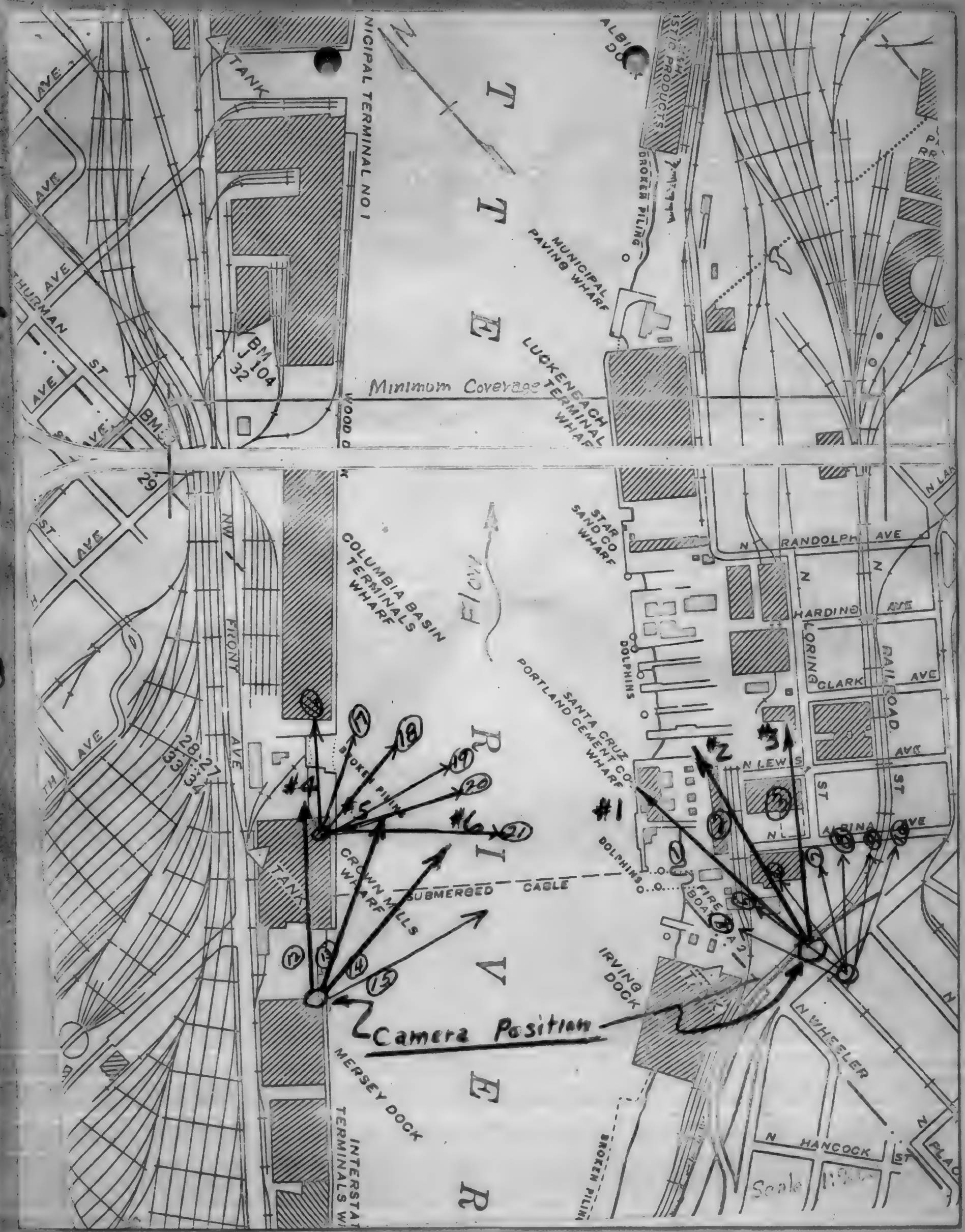
MAR 30 1964
OREGON
STATE HIGHWAY COMMISSION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MUNICIPAL PAVING WHARF
LUCKENBACH TERMINAL WHARF
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NW FRONT AVE
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COLUMBIA BASIN TERMINALS WHARF
STAR SAND CO WHARF
SANTA CRUZ PORTLAND CEMENT CO WHARF
DOLPHINS
BROKEN PILING
CROWN MILLS WHARF
SUBMERGED CABLE
FIRE BOAT
IRVING DOCK
MERSEY DOCK
INTERSTATE TERMINALS WHARF
BROKEN PILING
N RANDOLPH AVE
HARDING AVE
LORING
CLARK
RAILROAD AVE
N LEW
ALBINA AVE
N WHEELER
N HANCOCK ST
#1
#2
#3
#4
#5
#6
Camera Position
COLUMBIA RIVER
Scale

MR. PORTER::

ENC. ARE THE PRINTS OF PICTURES FOR THE FREMONT BR. DRAWINGS.

I TOOK THE LIBERTY OF CHANGING THE POSITIONS FOR THE PHOTOGRAPHY -- AFTER THE FIRST SERIES WAS TAKEN. THE REASON FOR THIS CHANGE WAS THAT THE BUILDINGS IN THE FOREGROUND WERE LARGE, MAKING IT TOO HARD FOR THE ARTIST TO GET THE CORRECT PERSPECTIVE.

THE BEST WAY TO DO THIS PARTICULAR TYPE OF JOB WOULD BE BY LOW LEVEL HELICOPTER. IF YOU FEEL THAT THIS SHOULD BE DONE AGAIN AND BY THIS PROCEDURE PLEASE CALL.

GENE KINNEY
PHOTO LAB.

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FOR FILING
I-405-8(17)
303

April 6, 1964

Mr. H. H. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York 6, N. Y.

Dear Mr. Quade:

Re: Fremont Bridge
Portland, Oregon

Upon receipt of your March 26 letter relative to orthotropic construction in connection with the Fremont Bridge in Portland, we again discussed the matter with the Bureau of Public Roads. The Bureau advises that because of uncertainties which are involved in developing a suitable wearing surface, all three of the proposed points should be considered in cost estimates at this time.

We are inclined to disagree with this thinking but inasmuch as this is a portion of the federal Interstate system and Bureau approval of any ultimate design must be obtained, we have little choice but to accede to its wishes. The Oregon Division office of the Bureau advises that it should have a little more detailed material on the matter in a few days. As soon as it is received, we will be glad to forward it to you.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

RLP:ms

cc Mr. Forrest Cooper
Mr. P. M. Stephenson
Mr. I. D. Merchant

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK 6, N. Y.
TELEPHONE BEEKMAN 3-6300

MAURICE H. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE

CONSULTANTS
JOHN O BICKEL
EUGENE L. MACDONALD

March 26,1964

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10,Oregon.

Re: Fremont Bridge
Portland, Oregon.

Dear Mr. Porter:

We have received your letter of March 24,1964 in further reference to orthotropic bridge construction. We will be guided accordingly.

Referring to the three items quoted by you from the letter received from the Bureau of Public Roads, I can not help but wonder whether the Bureau intended to require both the use of corrosive resistant steel in the deck plate and hot galvanizing. It would seem to us that if a satisfactory vapor barrier could be installed between the steel plate and the wearing surface, either galvanized carbon steel plate or corrosion resistant steel plate such as Cor-Ten or Mayari-R steel could be used but that both galvanizing and the corrosion resistant steel would not be necessary. It would be appreciated if this could be further verified.

At this point we are not making any claims with respect to the economy of orthotropic construction for this particular bridge. Although no total estimates of any design have as yet been compiled, we continue to think that the through cantilever of conventional design will prove to be the cheapest and that any departure from this design would depend upon how much you and the Bureau might be willing to spend for aesthetics.

NOTED
R. L PORTER

Thus far the views of our architect, Max Abramovitz, have pointed towards a design which could be best achieved by an orthotropic design; fact, there are indications that it might be the only way of achieving

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MAR 2 9 1964
OREGON
STATE HIGHWAY COMMISSION

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

the particular appearance that he likes best.

In preparing the estimates of cost, we will, of course, take into account the factors which are contained in your letter to us of March 24th. The net effect is likely to be the extra amount that it will cost to provide the best looking bridge.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

MNQ:Y

RECEIVED
MAR 30 1964
OFFICE OF
STATE HIGHWAY ENGINEER

March 24, 1964

AIRMAIL

Mr. M. H. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York 6, N. Y.

Dear Mr. Quade:

The following information has been received from the Bureau of Public Roads relative to wearing surfaces on orthotropic plate girder bridges:

"A recent inspection of the test bridge in Illinois revealed some cracking of each of the four pavement types tested. The cause or causes of the cracking have not been established and no sure method of preventing same is known. Since corrosion of the steel deck plate from salt solutions penetrating through the wearing surfaces cannot be tolerated, a vapor barrier between the steel plate and the wearing surface would be necessary, and any realistic cost estimate of an orthotropic deck design should include the following items:

1. Corrosion resistant steel in the deck plate.

2. Metallizing the steel deck plate with heat-applied zinc.

3. A vapor barrier between the metallized steel plate and the wearing surface.

"If such a realistic cost estimate shows the orthotropic plate girder design to be economically competitive, this office would not object to its inclusion in the consultant's study and report.

"It is our understanding that Bethlehem Mayari R or U. S. Steel Cor Ten will meet the requirements of corrosion resistant steel specified under Item 1.

"In their letter the Washington office also suggests that you may wish to conduct some of your own tests on wearing surfaces because of the differences in climatic conditions, materials, and mix between Oregon and Illinois."

It is agreed that there may be some differences because of climatic conditions between St. Louis and Portland. However, Portland is subject to 40+ inches of rainfall annually most of which occurs during the fall, winter, and spring, and is subject to only occasional snowfall. The use of sodium chloride to melt snow and ice is not extensive in Oregon but would probably be resorted to in emergencies. What I am trying to say is that our problem is possibly not as acute on the Pacific Coast as it is in the Midwest but I think it cannot be completely ignored.

Mr. Fanson is attempting to get what information he can from the Illinois and California Highway Departments on this subject of wearing surfaces.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

HLP:mb

cc Mr. Forrest Cooper
Mr. P. H. Stephenson
Mr. G. S. Fanson
Mr. I. D. Movshant

FORM CD-121 (6-58-58)
(PREPD. BY A.G. 200-10)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

TO : Mr. Forrest Cooper
State Highway Engineer
Salem, Oregon - Attention: R. L. Porter, Deputy State Hwy. Engr.

DATE: March 20, 1964

FROM : T. Dec
Assistant Division Engineer
Salem, Oregon

08-35.6

SUBJECT: Oregon Project I-405-8(1)301
Fremont Bridge Study

In answer to your letter of March 2, 1964, requesting information regarding wearing surfaces on orthotropic plate girder bridges our Washington office has supplied the following information:

> A recent inspection of the test bridge in Illinois revealed some cracking of each of the four pavement types tested. The cause or causes of the cracking have not been established and no sure method of preventing same is known. Since corrosion of the steel deck plate from salt solutions penetrating through the wearing surfaces cannot be tolerated, a vapor barrier between the steel plate and the wearing surface would be necessary, and any realistic cost estimate of an orthotropic deck design should include the following items:
>
> 1. Corrosion resistant steel in the deck plate.
>
> 2. Metallizing the steel deck plate with hot-applied zinc.
>
> 3. A vapor barrier between the metallized steel plate and the wearing surface.
>
> If such a realistic cost estimate shows the orthotropic plate girder design to be economically competitive, this office would not object to its inclusion in the consultant's study and report.

It is our understanding that Bethlehem Mayari R or U. S. Steel Cor Ten will meet the requirements of corrosion resistant steel specified under Item 1.

(more)

In their letter the Washington office also suggests that you may wish to conduct some of your own tests on wearing surfaces because of the differences in climatic conditions, materials, and mix between Oregon and Illinois.

We would like you to send us one additional copy of your foundation report of the Fremont Bridge and three copies of your answer to Parsons, Brinckerhoff, Quade, and Douglas' letter of February 20 requesting information relative to the above foundation report.

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PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK 6, N. Y.
TELEPHONE BEEKMAN 3-6300

March 18,1964

MAURICE N. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE

CONSULTANTS
JOHN O BICKEL
EUGENE L. MACDONALD

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10, Oregon.

NOTED
R. L. PORTER

Re: Fremont Bridge - Portland
Oregon.

Dear Mr. Porter:

Upon receipt of your letter of March 3, 1964 written in reply to my letter of February 20, 1964, pertaining to the above subject, I was somewhat dismayed to find that portions of my letter of February 20th need not have been written. When the material enclosed with your letter of January 21st was received, I noted that two bound copies of the borings were sent but there was only one copy of the rest of the material. I retained one of the log books and sent the rest to Mr. Fiore. Later, when I studied the logs in some detail, I had completely forgotten about the other material and promptly started asking you questions that occurred to me. Please accept my apologies.

With regard to the orthotropic construction, we have progressed far enough in our work to be of the opinion that it has some interesting possibilities from an aesthetic standpoint, and may be promising from the standpoint of economy, although we are not yet too sure of this. The basic problem is the wearing surface and we hope that you will be successful in getting some information from the Bureau of Public Roads or from the Missouri or Illinois State Highway Departments on the test bridge that was built near Troy, Illinois. The engineers who are designing the Poplar Street Bridge over the Mississippi River at St.Louis have told us that they expect that the orthotropic superstructure for that bridge will be put out for bids some time this summer, but that the wearing surface will be excluded from those bids so that several cycles of Summer and Winter experience can be available before

specifications are written for the wearing surface. However, the fact that they will be taking bids on it soon indicates that the Bureau and the two States have a high degree of confidence that a satisfactory wearing surface can be found. European experience in and the use of orthotropic construction covers a much longer period than they do in the United States. One of our Associates is going to Europe in about two weeks' time on other business and we are making arrangements for him to find out what he can about what the Europeans have done in surfacing these bridges and what their experience has been.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

MNQ:Y

RECEIVED
MAR 20 1964
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAR 4 - 1964
FOR FILING

I-405-8(12)303
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March 3, 1964

Airmail

Mr. H. H. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York 6, N. Y.

Dear Mr. Quade:

This is in answer to your letter of February 20 concerning foundation conditions and design features for the Fremont Bridge on Interstate Route 405 in Portland.

Material furnished with our letter of February 21 indicated that no correlation had been made between actual driving and tests using the Oregon Miniature Test Piling. In that report was a suggested method of correlating results obtained from the Oregon Test Piles tests to the N values obtained using a 2" O.D. split spoon sampler used according to ASTM D 1586-58T. In the present instance, this correlation would be as follows for Test Hole No. 1M at elevations -13, -14, and -15:

Using all recordings $N = \frac{\text{penetration blows}}{.8\ \text{ft.}} = \frac{132}{2.4} = 64$

Eliminating recording @ -13 $N = \frac{\text{penetration blows}}{.8\ \text{ft.}} = \frac{122}{1.6} = 76$

An examination of the recordings indicates that the first foot should be eliminated and with the above correlation, N values would indicate the impossibility of driving steel piling. It is our belief that steel piling, and not a displacement type piling, should be used wherever necessary in this project, with steel piling driven to practical refusal and with bearing values on the order of 9,000 psi of pile. Greater bearing values per pile can be obtained by welding additional plates to the tip of the piling to build up the point area.

No correlation has been attempted between the results obtained from the Oregon Miniature Test Piles and

static load tests. Information in this office is to the effect that the foundation material for the Maracaibo Bridge in Venezuela was a plastic foundation of sands, silts, and clays. The basic foundation material in the Fremont structure is sands and gravels with no plastic material.

Wall thicknesses of oversized samplers used on the foundation work are as follows:

2 1/2 inch I.D.	- 1/2 inch wall
4 inch I.D.	- 1/2 inch wall
4 1/2 inch I.D. screw	- 1/4 inch wall

Information on Drawing 2529-Fo indicates a 3" O.D. sampler for the bottom portion of the hole. This is in error as the O.D. of the sampler used was 3½" O.D. and 2½" I.D. The Raker sampler was used only on Test Hole No 6C,D, below -30, when the standard split spoon sampler was blocked by gravel particles. This is a sampler only and is not used to obtain penetration requirements. As you will note on this hole, penetrations are recorded as refusal with the Oregon Miniature Test Piles, which would indicate that steel pile could not be driven into this material.

We are certain that any type of design which would tend to enclose the lower deck would not be publicly acceptable. While we can appreciate that it might be desirable as to esthetic treatment, I am sure it would meet with considerable local criticism. We recommend that this idea not be given further consideration.

We will attempt to collect what information we can from the Bureau of Public Roads relative to the proposed wearing surface for the Poplar Bridge over the Mississippi River at St. Louis. We are not enthusiastic about orthotropic construction as no one in our organization has had experience with it. Certainly the wearing surface problem should be pretty well solved before we attempt to make use of this plan for the Fremont Bridge. We do not infer, however, that the door should be completely closed on orthotropic girders if you feel a design can be developed that has overwhelming advantages. If you think further consideration is warranted, this Department would appreciate additional information thereon and would like to thoroughly explore the matter with you.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

cc Mr. Forrest Cooper
Mr. P. H. Stephenson
Mr. I. B. Marchant

RLP:ms

FORM B-30 8M 8-63 49607

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
February 28, 1964

SUBJECT: Fremont Bridge
Bridge No. 2529

To: Mr. R. L. Porter
Deputy State Highway Engineer

The following is suggested as an answer to the first four paragraphs of the letter of February 20 from Parsons, Brinkerhoff, Quade and Douglas, regarding foundation material for the Fremont Bridge.

Material furnished ~~you~~ with our letter of February 21 indicated that no correlation had been made between actual driving and tests using the Oregon Miniature Test Piling. In that report was a suggested method of correlating results obtained from the Oregon Test Pile tests to the N values obtained using a 2" O.D. split spoon sampler used according to ASTM D 1586-58T. In the present instance, this correlation would be as follows for Test Hole No. 1M at elevations -13, -14 and -15:

Using all recordings $N = \frac{\text{summation blows}}{.8\ L} = \frac{155}{2.4} = 64$

Eliminating recording @ -13 $N = \frac{\text{summation blows}}{.8\ L} = \frac{122}{1.6} = 76$

An examination of the recordings indicates that the first foot should be eliminated and with the above correlation, N values would indicate the impossibility of driving steel piling. It is our belief that steel piling, and not a displacement type piling, should be used wherever necessary in this project, with steel piling driven to practical refusal and with bearing values on the order of 9,000 psi of pile. Greater bearing values per pile can be obtained by welding additional plates to the tip of the piling to build up the point area.

No correlation has been attempted between the results obtained from the Oregon Miniature Test Piles and static load tests. Information in this office is to the effect that the foundation material for the Maracaibo Bridge in Venezuela was a plastic foundation of sands, silts, and clays. The basic foundation material in the Fremont structure is sands and gravels with no plastic material.

Wall thicknesses of oversized samplers used on the foundation work are as follows:

2 1/2 inch I.D. - 1/2 inch wall
4 inch I.D. - 1/2 inch wall
4 1/2 inch I.D. scow - 1/4 inch wall

Information on Drawing 2529-Fo indicates a 3" O.D. sampler for the bottom portion of the hole. This is in error as the O.D. of the sampler used was $3\frac{1}{2}$" O.D. and $2\frac{1}{2}$" I.D. The Baker sampler was used only on Test Hole No. 6C,D, below -30, when the standard split spoon sampler was blocked by gravel particles. This is a sampler only and is not used to obtain penetration requirements. As you will note on this hole, penetrations are recorded as refusal with the Oregon Miniature Test Piles, which would indicate that steel pile could not be driven into this material.

Ivan D. Merchant
Bridge Engineer

IDM:vt

NOTED
R. L. PORTER

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK 6, N. Y.
TELEPHONE BEEKMAN 3-6300

February 20,1964

MAURICE N. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE

CONSULTANTS
JOHN O BICKEL
EUGENE L. MACDONALD

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10 Oregon.

Re: Fremont Bridge - Portland
Oregon.

Dear Mr. Porter:

In reviewing the boring information which you sent to us, we find considerable difficulty in attempting to evaluate the results of the 5-foot tapered pile tester which was developed and has been used by your Bridge Division. Not being familiar with it, we can not develop any quantative evaluation of it, or more specifically, evaluation of the material in which it was driven. We are wondering if you could give us your evaluation of the results of the use of this pile tester in terms of the penetration of steel H-piles driven to their usual bearing capacities.

Thus far it appears to us that for the most part support for the piers carrying the truss spans on the Fremont Bridge should consist of steel H-piles with hardened tips. An alternate might be a closed end pipe pile filled with concrete. Incidentally, we would be interested in knowing whether the results obtained from your pile tester have ever been correlated in any way with the small test pile in penetration by a static load that was used with apparent success for the construction of the Maracaibo Bridge in Venezuela.

We do not find that the wall thickness of the oversized samplers of 2½" I.D. and 4" I.D. used in sand and gravel is given in the report, and we have not been able to reduce the number of blows to the standard penetration test results. It would be appreciated if you could send us

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information on the wall thickness.

The Baker sampler which was used on some of the borings is seldom used in the East on foundation problems. Nevertheless, it would be interesting to us to know what relative densities were found in samples obtained by the Baker sampler.

We are making considerable progress and will send you soon an interim report on our progress to date. Mr. Abramovitz has been in our office several times and has come up with some interesting ideas that we are attempting to develop. One of them was that it might be interesting to make the bridge appear as a solid face between decks. This is structurally possible, but expensive. It does, however, convert the lower deck into a tunnel, which involves many problems of lighting and ventilation. We have not shown any enthusiasm for this plan and we doubt that you or the Bureau would have any interest in it either, despite its possible aesthetic appeal. We would appreciate it if you would let us know if, by chance, you should have an interest in this design.

Another design suggested by Mr. Abramovitz could best be accomplished by orthotropic construction. As you know, the Poplar Bridge over the Mississippi River in St.Louis is being designed with orthotropic construction (See Engineering News-Record, November 21,1963). I have written the designers of this bridge to see if we could get any information on the results to date on the test bridge near Troy, Illinois, that is designed to develop the best type of wearing surface to be used on orthotropic construction. The designers told us that the Illinois and Missouri Highway Departments, and the Bureau of Public Roads, are reluctant to release this information thus far. Perhaps you could get something on it from the Bureau or from either one of the two State Highway Departments. If you should feel that this type of construction is not acceptable because of the fact that there is not yet full and complete satisfactory evidence that a suitable wearing surface can be applied to it, we will not give this any further consideration, but the design that we are working on does have a certain aesthetic appeal and probably results in considerable economy, although we have not yet developed cost estimates for it.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

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November 5, 1963

AIRMAIL

Mr. M. M. Quade
Parsons, Brinckerhoff, Quade & Douglas
165 Broadway
New York 6, N. Y.

Dear Mr. Quade:

Re: Fremont Bridge
FAP-I 405-8(1)-301

It has been decided that the width of the safety curb on each side of the roadways of the Fremont Bridge be increased from the 10-inch width set up in the design contract to 24 inches. The roadway width between faces of curbs to remain as specified at the 57-foot width. This will increase the number to center distance of supporting trusses by one foot.

Will you please incorporate this modification in your section.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

cc Forrest Cooper
P. H. Stephenson
G. S. Paxson

GSP:hlb

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OCT 25 1963
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October 25, 1963

Mr. A. H. Parsons
Division Engineer
Bureau of Public Roads
477 Cottage Street N. E.
Salem, Oregon

Library

Dear Sir:

Re: Fremont Bridge FAP-I 405-8(1)-301

Our contract with the firm of Parsons, Brinckerhoff, Quade & Douglas requires them to employ a well-known architect as a consultant in preparing their report on the above project.

They have submitted the name of Max Abramovitz. Mr. Abramovitz is satisfactory to the State and I submit herewith a brochure containing a resume of his career and photographs of projects which he has been connected with.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

O. S. Paulsen
Deputy State Highway Engineer
(Bridges)

OSP:hlb
Encl.

cc Forrest Cooper
R. L. Porter (1 copy of brochure)
Lloyd P. Shaw

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I-405-8(17)303
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PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK 6, N. Y.
TELEPHONE BEEKMAN 3-8500

MAURICE N. QUADE
WALTER E. DOUGLAS
ALFRED REDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON

CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD
ROBERT H. MEADE

October 16, 1963

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem (10) Oregon.

Re: F.A.P.I-405-8(1) 301
Fremont Bridge over Willamette River, Portland, Oregon.

Dear Mr. Porter:

We acknowledge receipt of your letter of October 11, 1963 and the executed copy of the agreement between our firm and the Department for certain engineering services in connection with the above project. We note that we are now authorized to proceed with the assignment. This is most welcome and we look forward with much pleasure to assisting you and the Department on this engineering problem.

We also note that you and the Bureau of Public Roads concur in retaining the firm of Harrison & Abramovitz for the special architectural services that are required. Recently we were asked to send some copies of a brochure illustrating some of the work that this firm has done, as well as the Experience Record of Mr. Max Abramovitz. Three copies of this brochure are going forward to you under separate cover.

It would be appreciated if you would send to us at your earliest convenience all available data in addition to the prints of Drawing 18934 which we have already received that pertain to this project. We would like to review this data and start some preliminary studies in this office before going out to Portland and Salem to inspect the site of the bridge and discuss the project with you and your staff. I think that if we could do this first the time spent out there would be more productive because we would then have in mind

NOTED
R. L PORTER
NOTED
G. PAXSON

specific questions to discuss with you and specific items that we wish to look for at the site.

With this in mind it would appear that the week of November 11th would be the most favorable time from our point of view to be out there. For this first trip I will be accompanied by our Chief Bridge Engineer, Mr. M. E. Fiore. I would appreciate it if you would let us know whether any of the days during the week of November 11th would be convenient for you and whether we should go to Salem first or whether you would prefer to meet us in Portland? Perhaps you would not want or need to go to Portland, in which case we could make our inspection of the site on our way to Salem and meet you there.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

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OCT 18 1963
OFFICE OF
STATE HIGHWAY ENGINEER

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OCT 18 1963
OREGON
STATE HIGHWAY COMMISSION

FORM CD-121 (9-62)(a)
(PRES. BY A.G. 300-10)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon

TO : Mr. Forrest Cooper
State Highway Engineer
Salem, Oregon

DATE: October 9, 1963

FROM : A. [illegible] Parsons
Division Engineer
08-35-EC Salem, Oregon

SUBJECT: Oregon P.E. Project I-405-8(1)301
Consultant Services on Fremont Bridge over Willamette River

The proposed consultant agreement with the firm of Parsons, Brinckerhoff, Quade and Douglas for studies of alternate designs for the Fremont Bridge, submitted with Mr. Porter's September 30, 1963 letter, is approved. Concurrence is also given to retaining the firm of Harrison and Abramovitz for special architectural services as part of the agreement. You are authorized to proceed with the work at a total estimated fee of $87,500.

Three Xerox copies of the signature sheet, page 7, and information regarding the consultants' experience and qualifications should be furnished to this office after the agreement is executed.

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OCT 11 1963
OFFICE OF
STATE HIGHWAY ENGINEER

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October 8, 1963

Spec C

Oregon State Highway Commission

MISC. CONTRACTS and
AGREEMENTS No. 2657

Gentlemen:

On the agenda for the October 10 meeting will appear the matter of entering into an agreement with the firm of Parsons, Brinckerhoff, Quade, and Douglas of New York City for preparing preliminary designs for the proposed Fremont Bridge on Interstate 405 in Portland.

Due to our Bridge Division's heavy work load, it appears in the interest of expediency to have this work accomplished by a consulting firm. The work is to be on a time plus a fixed fee basis and is estimated to cost not in excess of $87,500. The matter has been discussed with the Bureau of Public Roads and it has given tentative verbal approval.

I recommend that you approve the agreement and authorize the Secretary to sign in your behalf.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc Floyd Quary
R. L. Porter
P. M. Stephenson
Victor D. Wolfe
Ivan Merchant
C. H. Maison

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503

Paxson

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK 6, N. Y.
TELEPHONE BEEKMAN 3-8300

September 24, 1963

MAURICE N. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE

CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

Spec

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10, Oregon.

Re: Fremont Bridge on Willamette River,
Portland, Oregon - Proposal for
Engineering Services for Preliminary
Studies.

Dear Mr. Porter:

This letter will further supplement our proposal of September 12, 1963 and our letter to you of September 18, 1963 pertaining to the above engineering services and is written in response to a telephone call from Mr. Glenn S. Paxson this morning.

As we understand it, the Bureau of Public Roads is unwilling to recognize our computer as an "employee" and wishes payment for the computer to be included in the lump sum portion of the proposal. We have estimated 45 hours' time of the computer at our standard charge of $45 per hour and this would add $2,000 to the lump sum fee.

In addition, we understand that you now wish five colored renderings instead of two. This would restore the $1500 allowed for three additional renderings that were deleted in accordance with our letter of September 18, 1963.

Finally, we understand that you wish to include the architect's fee in our proposal. We discussed today with Mr. Abramovitz the fee which he would ask for his services. He considers that this will require

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STATE HIGHWAY COMMISSION

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G. S. PAXSON

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R. L. PORTER

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Paxson

Spec

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK 6, N. Y.
TELEPHONE BEEKMAN 3-6300

MAURICE N. QUADE
WALTER B. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE

CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

September 24, 1963

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10, Oregon.

Re: Fremont Bridge on Willamette River,
Portland, Oregon - Proposal for
Engineering Services for Preliminary
Studies.

Dear Mr. Porter:

This letter will further supplement our proposal of September 12, 1963 and our letter to you of September 18, 1963 pertaining to the above engineering services and is written in response to a telephone call from Mr. Glenn S. Paxson this morning.

As we understand it, the Bureau of Public Roads is unwilling to recognize our computer as an "employee" and wishes payment for the computer to be included in the lump sum portion of the proposal. We have estimated 45 hours' time of the computer at our standard charge of $45 per hour and this would add $2,000 to the lump sum fee.

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STATE HIGHWAY COMMISSION

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G. S. PAXSON

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R. L. PORTER

a significant amount of his personal time plus expenses incurred by his staff in making sketches and architectural studies and has named a lump sum fee of $7500 for the services which he would furnish.

Based on the foregoing, our lump sum fee would be increased to $55,000 and would broken down as follows:

Electronic computer	$2,000
Overhead, directly related to technical payroll	22,000
Overhead, General Administrative and Selling Expense	4,000
Preparing text and plates for Report plus Printing	5,000
Renderings 5 @ $500	2,500
Travel and subsistence: four men - trips to Oregon	2,000
Long Distance telephone, Reproductions, Misc. Expenses	500
Partners Time, Profit and Contingencies	9,500
Architect's fee	7,500
	$55,000

The ceiling price would be increased from $78,500 to $87,500 - the additions consisting of $1500 for three additional renderings and $7500 for the architect's fee. The transfer of the computer charges from reimbursable to lump sum would not affect the ceiling fee.

We hope that this proposal is now in accordance with the Bureau's and Department's wishes and we look forward to further word from you.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

MNQ:Y

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STATE HIGHWAY ENGINEER

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OCT 7 1963

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Spec

412 Mohawk Building
222 S. W. Harrison
Portland, Oregon 97204

September 19, 1963

Mr. A. W. Parsons
Division Engineer
Salem, Oregon

H. B. Stanley
Regional Right-of-Way Engineer
68-00.7 Portland, Oregon

Oregon project I-405-8 (1) 301
Proposed Consultant Agreement

let's und. date 9-24-63

In transmitting a copy of the September 12 letter from Parsons, Brinckerhoff, Quade & Douglas to Deputy State Highway Engineer Porter, with the proposal referred to therein, you asked that we furnish sample termination and dispute clauses. Attached are two of each which have been used by the State of Washington.

While the consultant presents some good arguments for applying a percentage to salaries, rather than adding a lump sum, such a basis of payment cannot be considered. Use of the method provided for in paragraph 4, a, (4) of PPM 40-6 would seem to have many of the advantages of the actual salaries plus a percentage method.

We cannot agree that a Bendix 15-B computer is an employee, and we believe the charge therefor will have to be estimated and made a part of the lump sum.

Also, we believe that the requirement of paragraph 4, d, of PPM 40-6 for specifying "a maximum amount payable" will necessitate making the amount enough more than $80,000 to include the architect's fee. We do not think a maximum for only part of the work is contemplated.

When the agreement is prepared, we believe the location from which the view of the bridge is to be rendered should be stated.

Attachments

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SEP 27 1963
FOR FILING

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7276

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK 6, N.Y.
TELEPHONE BEEKMAN 3-6300

MAURICE N. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
~~RUSH G. REGENSBURGER~~
~~WILLIAM H. BROOKS, JR.~~
JOHN E. EVERSON
ROBERT H. MEADE

CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

Spec.

September 18, 1963

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10, Oregon.

Re: Fremont Bridge on Willamette River, Portland, Oregon - Proposal for Engineering Services for Preliminary Studies.

Dear Mr. Porter:

This letter will supplement our proposal of September 12, 1963 for the above services and is written in response to a telephone call from Mr. Glenn S. Paxson of September 16th.

With regard to the number of copies of the report, we will be glad to amend Section V of our proposal to furnish 25 copies of the report without any increase in the fee.

NOTED
R. L PORTER

Our proposal included furnishing five colored renderings for the five designs contemplated by the proposal. We now understand that two such renderings (the first and second choice) are all that you will need. Since we estimated an average cost of $500 per rendering, the lump sum referred to in Section VII of the proposal will be reduced from $45,500 to $44,000, and the ceiling price will correspondingly be reduced from $80,000 to $78,500.

In addition, Mr. Paxson requested that we submit for your information a breakdown of the lump sum fee. This is given below:

Overhead, directly related to technical payroll	$22,000
Overhead, General Administrative and Selling Expense	4,000
Preparing text and plates for Report plus Printing	5,000
Renderings 2 @ $500	1,000
Travel and subsistence: four men - trips to Oregon	2,000
ng Distance telephone, Reproductions, Misc. expenses	500
tners Time, Profit and Contingencies	9,500
Total	$ 44,000

copy to Paxson

Section VII of our proposal states that our Bendix 15-D Computer would be placed on the payroll for reimbursement along with the technical salaries paid to employees, at a unit cost of $45 per hour. This was not mentioned in our conversation with Mr. Paxson and we therefore assume that this is acceptable to you and will be approved by the Bureau of Public Roads. We have estimated that the computer would be employed on this work for approximately 45 hours, which means a total reimbursement of approximately $2,000.

Again, may I say that we are looking forward to this assignment and the opportunity to serve you and your staff.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

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Keep all Copies of letter E.

J. 405-8(12)303
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PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK 6, N.Y.
TELEPHONE BEEKMAN 3-6300

MAURICE N. QUADE
DONALD O. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE

CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

Spec C.

September 12, 1963

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Department
Salem 10, Oregon.

Re: Fremont Bridge, - Willamette River
Portland. Proposal for Engineering
Services for Preliminary Studies.

Dear Mr. Porter:

This letter is in response to your kind invitation of August 22, 1963 to submit a proposal for a study and recommendation of a type of bridge for the Fremont Bridge over the Willamette River in Portland on Interstate Route 5. The actual proposal, in substantially the same form as that which accompanied your letter, is enclosed.

NOTED
R. L. PORTER

It occurs to us, however, that a modification of Article VII, Payments, would be desirable from your standpoint and that of the Bureau of Public Roads as well as ours. In establishing the additional lump sum payment to cover profit, all overhead, preparation of report, renderings and all other miscellaneous costs incurred in the performance of the work except for actual technical salaries that would be separately reimbursed we have, of necessity, based this on the technical effort that has been estimated as required for the complete assignment. If this effort should prove to be less than anticipated for any reason (for example, abandoning at some interim point one of the specified types under study) we would be collecting overhead on that portion of the unused technical effort that has not been expended.

Our indirect costs directly associated with technical payroll are currently running at least 75% of technical payroll. Of this 24% consists of employee benefits directly related to payroll and the balance consists of other indirect costs such as rent, light, heat, accounting,

Sept 20, 1963
See letter of Sept 20, 1963 for revised cost.

NOTED
G. S. PAXSON

stenographic services, insurance, taxes and the dozens of other items of expenses comprising indirect costs, but not including general administrative and selling expenses.

A simple example will illustrate this point. Assume the total technical payroll is estimated as $30,000. We would have to include $22,500 (75%) in the added lump sum as payment for the indirect costs described above. If the technical payroll for one reason or another should be actually $20,000, then fair payment to us for such indirect costs would be only $15,000. In that instance we would be overpaid $7,500. Conversely, we would lose $7,500 if the technical payroll had been underestimated by $10,000.

If the basis of reimbursement for technical payroll could be changed to actual technical payroll plus 75% , the additional lump sum in our proposal to cover all other costs such as travel and susbsistence, telephone,other direct and indirect costs, preparation and printing of the report, renderings, partners' time and profit would be reduced from $45,500 to $24,500. The ceiling price would not be changed since this is expected to be an outside figure.

Under Article VII we have inserted in the proposal the ranges of salaries for professional and technical employees that apply to the several categories. Not knowing at this time exactly which employees will be assigned to the work, we are unable to indicate more than the salary range. Obviously this work will require our most capable men. No additions for living allowances for men employed in our New York office, where the work would be done, are required. All travel and subsistence for employees and a partner during trips to Salem and Portland are included in the lump sum.

We have also included for reimbursement as a technical "salary", our standard charge per hour for our Bendix 15-D computer. We anticipate that it will be economical to use the computer for some of the calculation work. It would therefore be proper to consider it as a technical employee. In the event of your acceptance of the alternate basis of reimbursement for technical payroll named herein, the 75% factor for indirect costs would not be applied to the electronic computer.

The ceiling price and the lump sum addition to the contract price quoted in Article VII contemplate the development and presentation of one design in addition to the four suggested by you and specifically named in the proposal.

This proposal does not include compensation for the services of an architect. The subject was discussed in our letter to you of

September 5, 1963 and also with Mr. Paxson on the telephone on last Friday. We propose that Max Abramovitz of the firm of Harrison and Abramovitz of New York City be employed. Frankly, Mr. Abramovitz makes no claim to having bridge experience. He has, however, served on a panel of the American Institute of Steel Construction to select the most beautiful bridge in at least one year in the past and is well known as one of the leading architects of this country. A discussion of the problem with him indicates a genuine interest in the subject and in making a worthwhile contribution to bridge architecture. It further reveals an understanding and sense of the engineering problems involved which is an important prerequisite for architectural services on bridges. This was one of the outstanding qualifications of Mr. Aymar Embury, who is the best known architect in this field before and after his retirement. We might add that we are of the opinion that our firm has some architectural capabilities of its own.

We have not discussed financial arrangements with Mr. Abramovitz. If you approve his selection and engage our services for this assignment, we will do so and submit a supplementary proposal for his services. No doubt some staff work in his office would be required for making sketches and studies.

Our proposal includes the preparation of five colored renderings approximately 22" x 44" in size - one for each type studied. Photographs of these will be bound in the report and the originals will be delivered to you for presentation to the interested agencies. We would employ, at our expense, a delineator to make these renderings. The estimated cost is an average price of $500 each.

There is, as you will understand, a considerable amount of preliminary design work necessary to develop quantities of materials and estimates of cost for the several types as well as studying some of the most important features of the design to be sure that some of the heavy structural connections that will be required are feasible or perhaps even possible. This is particularly true of the self-anchored suspension design. In view of the double deck, some of the design work is without precedent and requires considerable study to accomplish the objectives of the report. The conventional through-cantilever design is not a special problem.

This is a most challenging and interesting assignment and is the kind of work that we particularly like to do. We thank you for the opportunity to submit this proposal and hope that it will be accepted. We look forward with much pleasure to assisting you on this work.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

MNQ:Y

RECEIVED
SEP 13 1963
OFFICE OF
STATE HIGHWAY ENGINEER

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

A PROPOSAL TO FURNISH ENGINEERING AND ARCHITECTURAL SERVICES FOR A PRELIMINARY STUDY OF THE FREMONT STREET BRIDGE OVER THE WILLAMETTE RIVER IN PORTLAND, OREGON.

Dated September 12, 1963

I This proposal, if accepted by the Oregon State Highway Commission, will be the basis for a contract between the Oregon State Highway Commission, hereinafter referred to as "State". and the firm of Parsons, Brinckerhoff, Quade & Douglas, hereinafter referred to as "Consultant", covering the services to be furnished. The contract shall comply with the provisions of Policy and Procedure Memorandum 40-6 dated May 20, 1960, including the attachment thereto entitled "Outline of Provisions and Clauses for Engineering Agreements" and revisions and supplements thereto, issued by the Bureau of Public Roads, U. S. Department of Commerce.

II Scope of Work

The services by the Consultant covered by this proposal are restricted to a study of the site of and conditions appertaining to the proposed bridge and based upon such study the submission of a report including a recommendation as to the type of structure which the Consultants consider most appropriate, taking into consideration the aesthetic appearance, the cost and the service-ability of the structure. The study and report will include, but not be restricted to, the following:

(1) An investigation of at least four types of structure:

(a) A three-span cantilever-type river crossing and approaches.

(b) A three-span series of tied arches for the river crossing with approaches.

(c) A three-span river crossing with the central span of the type generally known as the Cape Cod Ship Canal type with approaches.

(d) A three-span self-anchored suspension structure for the river crossing with approaches.

(e) Any other type that the Consultants may consider appropriate for the structure and which satisfies the restrictions set forth hereinafter.

(2) For each type of structure considered the report shall include a discussion of the advantages and disadvantages of the type, a cost estimate segregated into quantities of the items entering into the construction with estimated unit costs for each item and a line drawing showing the side elevation of the structure. For each type the report shall contain a photograph of a colored rendering showing the structure as it would be seen by an observer stationed upstream from the bridge and on a street parallel with the river. These photographs will be at least 11" x 22" in size and will be folded in the report. The originals, at least 22" x 44" in size, will be furnished.

(3) The Consultant will employ the services of an experienced architect and will give consideration to his advice in combination with the cost estimates in making a recommendation of the type of structure to be used.

(4) The traffic interchanges at each end of the main structure are not included in the scope of this study. The main structure is defined as that portion of the structure between Engineer's Stations 341+80 and 368+50 as shown on Oregon State Highway Department's Drawing No. 18934 including the piers at each of these stations.

III Limitations

There are certain conditions which limit the Consultant's choice of type and span arrangement. These, in general, are as follows:

(a) The navigational clearances, both vertical and horizontal and the position of piers in the river channel, shall be as shown on Oregon State Highway Department's Drawing No. 18934. The clearances and pier positions shown on this drawing have been informally approved by the Port of Portland and by navigation interests. Formal permit from the U. S. Secretary of the Army has not as yet been issued. In the event of any changes in clearances and pier location, any resulting changes in the Consultant's costs will be negotiated between the State and the Consultant.

(b) The grade line will be as shown on Oregon State Highway Department's Drawing No. 18934.

(c) The structure will be for eight lanes of traffic, four lanes northbound on the lower level and four lanes southbound on the upper level.

(d) The horizontal width of each roadway will be 57 feet between the roadway faces of curbs, consisting of four 12-foot lanes, 3 feet curb clearance on the left and 6 feet curb clearance on the right.

There will be an 18-inch safety curb 9 inches high between the face of the curb and the roadway face of the handrail. There will be 23 feet of vertical clearance between the lower roadway deck and the lowest point of the upper deck floor system.

(e) The positions of the piers at Engineer's Stations 354+50, 349+20, and 364+80 may be changed provided no railroad tracks or existing streets are interferred with.

IV Data and Information Furnished by the State

The State will furnish, without cost to the Consultant, all the data and information in their files pertinent to the project. These data include the following:

(a) The map and clearance data shown on Oregon State Highway Department's Drawing No. 18934 with detailed survey data from which the map was prepared.

(b) The logs of two exploratory foundation borings at the sites of each of the all piers giving estimates of the type of material found.

(c) The State will acquire all right of way for the project.

(d) The State will negotiate all agreements with the City of Portland, the railroads to be overcrossed and all other third parties.

V Form of Report

The report will be submitted in ~~15~~ 25 copies on sheets, except for drawing prints, 8½x11" in size. A good quality of paper will be used and text will either be printed or produced by another acceptable process.

VI Time Allowed for Submission of Report

The Consultants will submit the completed report within 6 calendar months from the execution of a contract covering the furnishing of their engineering service.

VII Payments

(a) Amount of Payment

Payment for all of the work under this proposal will be based on the actual salaries and living allowance paid employees directly engaged

on the work, exclusive of partners in the Consultants' firm, and the fee of any consulting architect employed by the Consultants. The following is a schedule showing the rating and maximum pay scale of employees to be directly engaged in the work:

Grade	Position	Estimated No.of Employees	Weekly Salary Range
VIII	Head, Division of Structures	1	$308*
VII	Head, Bridge Section	1	250*
VI	Senior Engineers(Ass't.Section Heads)	2	200-232
V	Senior Structural Design Engineers	2	176-200
IV	Structural Designers	4	154-176
C	Engineering Draftsmen	2	100-150

Bendix 15-D Computer: $45/hour
* Part time for direction of the work.

In addition to reimbursement for the actual salaries of employees engaged on the work the Consultants shall be paid an additional sum of $45,500 as a lump sum to cover profit, overhead,preparation of report, and all other miscellaneous costs incurred in performance of the work except those listed hereinafter.

The Consultants will be paid the actual amount of the fee paid to an architect employed to assist in the type selection. The total payment to the Consultants for all work and expense involved in the performance of the services set forth above shall not exceed $80,000, excluding the fee paid to the architect. This maximum amount shall be adjusted should the State materially change the scope or character of the work to be performed. The amount of any adjustment shall be the subject of a supplementary contract negotiated between the State and the Consultant.

The Consultant will keep accurate records of all salaries paid employees andof other reimbursable costs and shall submit such records for audit by the State.

VIII Partial Payment

The Consultant will bill the State at monthly intervals for all reimbursable costs and percentage allowance incurred in the preceding month and, subject to audit, the State will pay the Consultant on such billing. The total of all partial payments shall not exceed 90 percent of the total maximum payment to the Consultant. The final 10 percent of the payment shall be made upon the submission and approval

of the report by the State and audit of the Consultants' records.

IX Entering into Contract

The Consultant agrees to enter into a contract with the State for the services set forth above and on the terms set forth in Sections VII and VIII of this proposal within 10 days after submission of such contract to the Consultant by the State.

Respectfully submitted,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

By: _____
M. N. Quade, Partner

RECEIVED
SEP 10 1963
FOR FILING

I-405-8(17) 303
7276

Spec.

September 10, 1963

Parsons, Brinckerhoff, Quade & Douglas
Engineers
165 Broadway
New York 6, New York

Attention: Mr. Quade

Gentlemen:

Re: Fremont Bridge over Willamette River in Portland

Reference is made to your letter of September 5 concerning the preliminary study of this project. I believe that I answered most of the questions raised in this letter by telephone on September 6, but will confirm this by this letter.

Whether the structure is beautiful or not depends primarily upon the personal opinion of whoever is judging the matter. In this particular case, we have been criticized by the architects that our structures are not as pleasing to look upon as they should be. In deciding upon the type of structure which should be used we must, of course, take the cost factor into very serious consideration and within reasonable limits come up with the best looking structure that is economically feasible. I believe that the group which we will primarily have to satisfy are the architects themselves and for this reason we believe that the architect selected to cooperate in this study should be one who carries considerable weight with the architects themselves. Whether this man has wide experience with bridge structures would seem to be a secondary consideration.

We have done exploratory drilling on both banks of the river and it is evident that the foundation for the shore piers will be on dense gravel partially cemented. We are now negotiating for a drilling contract for the two river piers. From our experience in the river, we anticipate that a dense gravel formation will be encountered at a reasonable distance below stream bed although there is a possibility that piling will be needed.

Fenders will not be required on the river piers but it will be necessary that we install a timber cushion on the shore side of each river pier. This would consist of 12' x 12' vertical timbers anchored to the pier with a 6' x 12' horizontal sheathing. This would require an extra 1 1/2' for pier width and the investigators have agreed to reducing clearances on the side channels by this amount.

Since our telephone conversation, we have discussed the matter of colored perspective drawings. These should be limited to the two types which are your first and second choice. Certainly, there is no reason to make these drawings for a cantilever span as I am sure this type will never meet with the approval of the architects.

The double-deck construction for the spans is fixed. This was given very thorough study prior to adopting the geometric layout of the approaches and it is too late to consider any change now.

You asked the reason for the vertical clearances specified for the lower deck. This is to accommodate directional signs which will hang below the floor beams of the upper deck.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

G. S. Parsons
Deputy State Highway Engineer
(Retired)

GSP:hlb

cc Forrest Cooper
R. L. Porter
I. D. Merchant

RECEIVED
SEP 9 1963
FOR FILING

Correct
Projects
Misc - Portland

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK 6, N. Y.
TELEPHONE BEEKMAN 3-6300

September 5, 1963

MAURICE H. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE

CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

Fremont Bridge

Mr. R. L. Porter
Deputy State Highway Engineer
Oregon State Highway Commission
State Highway Building
Salem 10, Oregon.

NOTED
R.L. PORTER

Re: Fremont Street Bridge over the Willamette River, Portland.

Dear Mr. Porter:

I attempted to reach you by telephone today but was told that you would not return to your office until next Monday. I will call you on Monday morning in order to discuss several matters with you in regard to our proposal for the engineering studies in connection with the above project. In the meantime, I will list some of these in order that you may have an opportunity to consider them prior to our telephone conversation. Several are in reality rather detailed matters but others would have a considerable effect on the amount of work to be done on the studies and would affect the ceiling price which we have been asked to name in the proposal.

The scope of services for these studies includes employment of an architect with experience in the architecture of highway bridges. There are only two that we know of and that we have worked with in the past, who have had extensive experience in the field of bridges. One is Aymer Embury and the other is Gordon Lorimer. Neither of these is available since Mr. Embury is now quite elderly and has retired from practice; Gordon Lorimer is now employed full time by the Port of New York Authority and under the terms of his agreement has had to abandon his private practice.

Beyond that, the choice seems to be between one of two or three ons who have had limited experience in the field but are very little n outside of a small circle of clients in the New York Metropolitan

area and a nationally known architect who has had no appreciable amount of experience in the bridge field but has the capacity to absorb the problem and come up with good suggestions as well as having sound aesthetic judgment. In this letter I do not at the moment care to mention specific names but in telephoning you on Monday I will do so and go into further detail.

Thus far we have no information on the general foundation conditions and are wondering whether the piers would have pile foundations or whether they would be founded on rock or other competent material? This would have some influence on the amount of work to be done in preparing the estimates of cost. Perhaps you could give us a general description of what might be expected on the telephone Monday.

Drawing #18934 shows an allowance of 25 feet for the width of each main pier, which would indicate that no fenders are required in the river. Is this correct?

On Page #2 of the proposal form you ask that the report shall include for each type of bridge a print from drawings showing the structure as it would be seen from a certain observation point. Would you not like for this presentation a colored perspective rendering of each type studied, made by an expert delineator or artist? Black and white photographs of the renderings can, of course, be included in the report itself, but the originals would be available for presentation to the various agencies or art commissions that may be concerned with the problem. Generally these can be obtained for a few hundred dollars each and we would be inclined to recommend them but would need to make a proper allowance for these in the costs of our work.

We can not help but be curious at this stage about the economics of the double-deck construction for the truss spans. Having in mind the costs of raising the upper level roadway to a higher grade and the added costs of separating the two roadways on each side of the river at the points where they diverge due to the long spans resulting from acceptable radii of horizontal curvature, we can not help but wonder whether it would not be worth while considering a single deck level with either three or four parallel trusses or arches, as the case may be. Although the main spans would undoubtedly cost more with twin bridges having four trusses or a single bridge with three trusses, it is possible that the savings in the approaches might offset a substantial portion of this cost. Perhaps

there are other reasons that we are not aware of why you have selected a double-deck bridge; however, we would like to discuss this with you on the telephone next Monday.

After our conversation with you on Monday in regard to these items we will be in a position to submit our proposal promptly.

Yours very truly,

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

M. N. Quade

MNQ:Y

cc: Mr. Glenn S. Paxson

RECEIVED
SEP 9 1963
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
SEP - 9 1963
OREGON
STATE HIGHWAY COMMISSION

RECEIVED
SEP 1 1963
FOR FILING

UNITED STATES GOVERNMENT

Memorandum

I-405-8(17)303

TO : Mr. Forrest Cooper
State Highway Engineer
Salem, Oregon

7276

FROM : A. W. Parsons, Division Engineer
08-35.-EC Salem, Oregon

By: T. Dec
Engineering Coordinator

Spec

SUBJECT: Oregon P.E. Project I-405-8(1)301
Consultant Service on Fremont Bridge

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
477 Cottage St. N. E.
Salem, Oregon - 97301

DATE: September 9, 1963

Mr. Paxson's August 21, 1963 letter with attachments indicated your intent to utilize the firm of Parsons, Brinckerhoff, Quade and Douglas for preliminary studies on the Fremont Bridge. The project is considered to be sufficiently complex to warrant use of consultant services. Also, we concur in your judgment that the firm is adequately qualified to perform the proposed services. However, you should submit the information regarding experience and qualifications specified under paragraph 3 of PPM 40-6 for our files at the time you submit your proposed agreement for approval with a request for authorization to proceed with the work.

Since the proposal is not in the final form of the contract, but provides that the contract will comply with PPM 40-6 and attachment, we assume that additional provisions will be included. Provision probably should be made for Items II, 1, e and II, 4, a, c, e, f, g, h, i, j, and k of the attachment to PPM 40-6. In addition, we suggest consideration of the following:

1. On page 6 of your proposal there is provision for increasing the maximum payment, but there probably also should be provision for adjustment of the lump sum portion in the event you materially change the scope or character of the work.

2. Under VIII of your proposal the 90% limitation probably should be based on the calculated amount due the consultant rather than on the total maximum payment. The final total possibly might be less than 90% of the specified maximum.

3. Indicate the extent of subsurface investigation information you intend to furnish the consultant and procedures for supplementing such information if deemed necessary.

NOTED
R. L PORTER

NOTED
LLOYD P. SHAW

Copy to Mr. Paxson
9-9-63 mm

RECEIVED
AUG 27 1963
FOR FILING

E-1105-8(17)303
7276

MAURICE N. QUADE
WALTER S. DOUGLAS
ALFRED HEDEFINE
RUSH F. ZIEGENFELDER
WILLIAM H. BRUCE, JR.
JOHN E. EVERSON
ROBERT H. MEADE

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS
ENGINEERS
FOUNDED BY WILLIAM BARCLAY PARSONS IN 1885
165 BROADWAY, NEW YORK 6, N. Y.
TELEPHONE DEEKMAN 2-6300

RECEIVED
AUG 2[illegible] 1963
OFFI
STATE HIGHW[illegible]

CONSULTANTS
JOHN O. BICKEL
EUGENE L. MACDONALD

August 23, 1963

Mr. Glenn S. Paxson
Oregon State Highway Commission
State Highway Building
Salem 10, Oregon.

Dear Glenn:

The bridge over the Willamette River in Portland that we talked about on the telephone last Friday is certainly a most interesting and challenging job, and one on which we would be most happy to assist you and the Oregon Highway Department. That sort of work is very much up our alley and we really enjoy getting our teeth into that kind of a problem.

As you know we can, if you so desire, bring in a "name" architect into the picture - either one of your own selection or one that you might wish us to recommend for your approval.

I will be glad to serve as the partner in charge of the work, but since our jobs are all staff work, the partners and all of our staff work together on a problem of this sort and each contributes everything that he can to the solution.

I hope that we will be hearing from you further about this job and look forward to the opportunity of serving you. In the meantime, this note will record our keen interest in this assignment.

With very best personal regards, I am

Sincerely yours,

M. N. Quade

Copy to Merchant

MNQ:Y

NOTED
G. S. PAXSON

RECEIVED
AUG 26 1963
OREGON
STATE HIGHWAY COMMISSION

RECEIVED
AUG 23 1963
FOR FILING
I-405-8(17) 303
7276

Spec C.

August 22, 1963

Parsons, Brinckerhoff, Quade & Douglas
Consulting Engineers
165 Broadway
New York City, New York

Attention: M. M. Quade

Gentlemen:

Re: Fremont Bridge - Willamette River
Portland, Oregon

Reference is made to Mr. Parson's telephone conversation concerning your availability for a study and recommendation of bridge type for the Fremont Bridge over the Willamette River in Portland, Oregon on Route 5 of the National System of Interstate and Defense Highways.

It will be necessary that we have from you a formal proposal to furnish these services upon which a contract can be based. Attached is a draft of a proposal which shows in general the information we need. I realize that you have entered into numerous other contracts of a similar nature involving federal-aid highway work and you may prefer some modification of this proposal.

Attached is a print from our Drawing No. 18934, which is referred to in the proposal. We would appreciate hearing from you at your earliest convenience.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

Attachments

cc Forrest Cooper
Victor D. Wolfe
G. S. Parsons

GSP:hlb bbo

RECEIVED
AUG 22 1963
FOR FILING

I-405-8(17)203
7276

August 21, 1963

Spec.

Mr. A. M. Parsons
Division Engineer
Bureau of Public Roads
477 Cottage Street N. E.
Salem, Oregon

Dear Sir:

Re: Fremont Bridge of Willamette River I 405-8(1)-301

The matter of type selection for the main spans of the proposed bridge over the Willamette River on the Stadium Freeway in Portland has not been resolved. Because of the volume of work now underway by the State's forces, it is advisable to employ the services of an outside consultant to study the project, prepare a report, and make recommendation as to the type of structure most suitable for the project. This study will involve the preparation of preliminary estimates of cost of several structural types which might be used and an evaluation of these types, taking into account the cost, the aesthetic appearance of the finished structure, and the functional adequacy for the handling of the anticipated traffic.

Under date of January 5, 1962, the State submitted to your office an outline of the procedure to be employed by the State in contracting with consultants for engineering service. The State, for many years, has kept constant contact with other states and with consulting engineering firms having experience in the design and construction of highway bridges. The State has been in constant contact through representatives of consulting firms and has adequate information as to the qualifications and experience of many of these firms.

In the judgment of the State, the firm of Parsons, Brinckerhoff, Quade, and Douglas, who have offices in New York City and in San Francisco, California, are adequately qualified for the required work. The State has made inquiry and has determined that this firm of consulting engineers have personnel available to perform the services required within a reasonable time, in this case, we

would require that the work be completed within a period of six calendar months following the execution of a contract covering the services. We propose to request this firm to submit to us a proposal for the doing of the work, in general form of the draft attached hereto, in which they will formally make their proposal for fees covering the work.

Your consideration of this matter and approval of the procedure outlined herein is requested.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

G. S. Pearson
Deputy State Highway Engineer
(Retired)

GSP:hlb
Attach.

cc Forrest Cooper
R. L. Porter
L. H. Young
C. H. Nelson
(3 extra copies to HPR)
Merchant

103-1619 Washington at 7th Street (Ore. City) on Cascade Hwy. 1969

#7277 (Traffic signal)

CIH 3743

RECEIVED
JUN 19 1970
FOR FILING

103-1619

7277

June 16, 1970

8534

Mr. G. W. Kolling
District Sales Manager
Northwestern District
The Union Metal Manufacturing Company
Room 202 - Sylvan Building
2035 S. W. 58th Street
Portland, Oregon 97221

Dear Mr. Kolling:

Re: West Wyeth Weigh Station Illumination
Contract No. 7219

Oregon City Signals, Contract No. 7277

I have your letter of June 5 explaining in detail the reasons for delay in delivery of poles to the above contracts. This is essentially the same as information submitted by the contractor along with his request for extensions of time on the contracts and was given due consideration in adjusting the contract time.

Procurement of satisfactory materials for a contract to complete the work within the time allotted is, of course, the contractor's entire responsibility and the Highway Division does not in any way exercise any control over this phase of a contract. In submitting a bid, the Division can only assume that the contractor has made arrangements to his satisfaction to obtain the necessary materials to complete the work within the time allotted.

Strikes in a contractor's material supply plant that affect manufacture and delivery of materials which occur after the award of a contract are considered to be a condition beyond the control of the contractor and as such are entitled to consideration in adjusting the contract time.

The proposals submitted by the contractor for these two contracts contained the following language:

"Examinations of Plans, Site, Conditions, Etc."

> "The bidder represents that before signing this proposal, a careful examination was made of all conditions pertaining to the work and of the plans, specifications and contract; that he has fully informed himself as to the quality of materials and character of work required; and that he has made a careful examination of the location and condition of the work and the sources of supply for materials.
>
> "The State of Oregon, the State Highway Commission, its officers and employees, will in no case be responsible for any loss or for any loss or for any unanticipated costs that may be suffered by the contractor as a result of the contractor's failure to fully inform himself in regard to all conditions pertaining to the work."

"To the State Highway Commission of the State of Oregon:"

> "The undersigned, as bidder, declares:
>
> That he has personally inspected the location and the site of the work and has acquainted himself with all conditions, local and otherwise, affecting it;
>
> "That he submits this proposal in accordance with the Instructions to Bidders and subject to the terms and conditions stated herein; and
>
> "That he has satisfied himself as to the quantities and conditions and understands that in signing this proposal he waives all right to plead any misunderstanding regarding the same."

Strikes occuring prior to the submission of a proposal and award of a contract are a condition existent at

the time of bidding and under the above-quoted language from the contractor's proposal cannot be considered as a cause for adjustment of the contract time.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
Ivan Merchant

CAG:ag ja

THE UNION METAL MANUFACTURING CO.

Quality Products Since 1906

CANTON, OHIO 44705 • AREA CODE 216 • TELEPHONE 454-6111

PLEASE REPLY TO—
ROOM 202 - SYLVAN BLDG.
2035 S.W. 58TH STREET
PORTLAND, OREGON 97221
TELEPHONE: (503) 292-8881

June 5, 1970

Oregon State Highway Department
State Highway Building
Salem
Oregon 97310

Attention: Tom Edwards
Assistant State Highway Engineer

Subject: State of Oregon Projects
Sims Electric Company - Contractor

Contract No. 7219
West Wyeth Weigh Station
Illumination

Contract No. 7277
Oregon City Intersections
Signalization

Dear Tom:

Both of the subject contracts were subject to assessment of liquidated damages, as a result of the time we required to deliver the poles on the projects. Due to an Operating Engineers strike affecting our Long Beach, California assembly plant, each of these projects was allowed a time extension of forty-five calendar days, the actual length this strike, plus a seven day allowance for plant start-up time, or a total of fifty-two calendar days. The actual additional time consumed was seventy-two days on contract 7219, resulting in an assessment of liquidated damages for twenty days, on that project, and an additional eighty days were consumed on contract 7277, resulting in an assessment of liquidated damages for thirty-three days.

There are two other factors involved here, however, that deserve consideration. All of our poles are manufactured at either our Fremont or Long Beach, California plants for this marketing area. However, the cold-rolled, tapered steel tubes for the pole shafts and mastarms, which are the primary components, must be rolled at our Canton, Ohio plant. As a result of a strike by the United Steel Workers, our Canton, Ohio plant was closed for the period from October 31st, 1968, to February 8th, 1969. Although a seven day start-up time for a typical manufacturing plant would appear to be realistic, it was, in fact, necessary to stop all shipment of steel into our plant, since, obviously, they could not be received. The steel mills, of course, had no alternative but to cancel all of our open orders for steel and we had to

therefore reorder after settlement of this strike, with steel schedules at that time running sixty to ninety days, depending on type. What steel we had in inventory was rapidly consumed and during the period when our Ohio plant received the orders for the tubes on the jobs, their normal eight week lead time was running fourteen to sixteen weeks, as a result of the current steel mill schedules. As you can see, it was necessary to interrupt a regular inventory turnover, in ordering steel for the period of the strike - the effect of this was not felt until that period during which the orders for the two contracts were in process. This is a situation that, although it is outside the actual period during which this plant was closed by a strike, is a direct result of the strike and had the strike not taken place, we would not have experienced any delays in receiving regular inventory shipments of steel.

Even more directly affecting these two contracts was the fact that the forty-five day strike at our Long Beach, California plant was during the summer of 1969 - a period during which U.S. Bureau of Labor statistics will confirm had the highest rate of employment of blue-collar workers ever recorded. In California, there was a severe shortage of certified welders during this period and we gradually lost the majority of our welders over this forty-five day period to other industries not affected by the Operating Engineers strike. The facts were that although this strike was settled on September 2nd, on October 1st, we had but 30% of our normal force of welders and on November 15th, it was up to only 70%, in spite of the fact that, of course, we were taking all the certified welders the union could provide, with a standing request with the union for certified welders for a continuous three-month period, which it took them to provide us with a full force of welders.

Further, there are component parts - such as cast iron pole tops, stamped handhole covers, etc. - which are purchased from outside specialty manufacturers on an automatic shipment inventory turnover basis. Since these shipments had to be interrupted, the situation was much the same as that on obtaining steel at our Ohio plant. That is, when it became necessary to cancel these orders, because we were unable to accept shipments, we then had to place new orders after the strike was settled and were without these components during that period of these outside suppliers initial delivery times.

In essence, although a seven day start-up time is a realistic period to get machinery working and production moving, there are the other factors, as outlined above, that are a direct effect of a strike of any length and are literally beyond the manufacturer's control, considering the complexity of industry today and the demands on and pace of industry, particularly during that highest period of the economy.

This is not a request for any special consideration, but rather an effort to establish that there are factors immediately following a

strike that are a direct effect of that strike and could not have taken place had there not been a strike, that I feel are justifiable considerations in a situation such as this. Sims Electric Company has a state-wide reputation as a conscientious and reliable contractor. They did everything possible to install this contract just as promptly as they were physically able. At the same time, I also feel Union Metal did everything possible to ship the poles required as promptly as it was feasibly possible to do so, within the limitations and extra-ordinary conditions beyond the actual period of our strikes, as outlined above.

I would appreciate your giving sincere consideration to the possibility that these foregoing circumstances are, in reality, the direct effect of the strikes, as outlined, and do justify the elimination of any liquidated damages assessed against Sims Electric Company, on these two projects.

Thank you for your consideration.

Very truly yours,

G. W. Kolling
District Sales Manager
Northwestern District

GWK:gh

RECEIVED
JUN 8 1970
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAY 18 1970

FOR FILING

OREGON STATE HIGHWAY DIVISION

103-1619
7211

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

May 15, 1970

Sims Electric Company
721 S.E. Oak Avenue
Roseburg, Oregon 97470

Attention Mr. Ray O. Sims

Gentlemen:

Oregon City Signals, Contract 7211

Your letter of April 29, 1970, concerning the time extension of this contract has been referred to this office for reply.

As you are aware, the contract was awarded July 11, 1969, with 150 calendar days allotted to complete the work which forecast a completion date of December 20, 1969. The work was actually completed March 10, 1969, with 230 calendar days charged. This is an overrun of 80 calendar days.

The closure of the Union Metal Manufacturing Company's Long Beach plant during the period July 19, 1969, to September 2, 1969--a total of 45 calendar days plus a 7-day allowance for plant start-up time, or a total of 52 calendar days--was considered a condition beyond your control and, as such, would entitle you to an extension of 52 days without assessment of liquidated damages. However, in this case the strike started July 19, 1969, and the contract calendar day count did not start until July 24, 1969, indicating a period of 5 days in which you were not charged time.

Hence, the total delay of 52 days must be adjusted by deducting 5 days, leaving a total of 47 days' extension without assessment of liquidated damages.

Very truly yours,
ORIGINAL SIGNED
IVAN D. MERCHANT

Ivan D. Merchant
Bridge Engineer

CAG:mf
cc: Floyd Query
L. W. Rulien
R. V. Cotton

NOTED
FLOYD QUERY

RECEIVED
MAY 8 - 1970

GLENN L. JACKSON, CHAIRMAN
MEDFORD
[redacted]
FRED W. HILL, MEMBER
HELIX
THADDEUS BRUNO, Member
Portland

103-1619
7277

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
[redacted]
Milwaukie 97222
May 5, 1970

Sims Electric, Inc.
721 S.E. Oak Avenue
Roseburg, Oregon 97470

Re: Oregon City Traffic Signals
Contract No. 7277

Gentlemen:

This is in answer to your request, dated April 29, 1970, for the reason your request for an increase of 80 days in time allowed for completion of the above contract was reduced to 47 days.

As we do not have this information in this office, we are forwarding your request to our division office with a copy to the Secretary of the Oregon State Highway Commission.

Very truly yours,

R. V. Cotton
Res. Br. Engr.

cc: L. W. Rulien
Floyd Query
Ivan Merchant

NOTED
FLOYD QUERY

OFFICES IN ROSEBURG and MEDFORD
PHONE:
MEDFORD (503) 773-6241
ROSEBURG (503) 673-5521

SIMS ELECTRIC INC

PLEASE REPLY TO:
SIMS ELECTRIC, INC.
721 S. E. OAK AVE.
ROSEBURG, OREGON 97470

RAY O. SIMS, PRESIDENT
WM. H. SIMS, VICE PRESIDENT
W. D. MATTSON, VICE PRESIDENT
C. W. WAKEFIELD, SECRETARY
GLENN B. CLUTE, ASSIST. SEC.

April 29, 1970

R. V. Cotton
Resident Bridge Engineer
Oregon State Highway Dept.
P.O. Box 2157
Portland, Oregon 97209

Reference: Oregon City Contract #7277

Dear Mr. Cotton:

We have received a post final estimate #4 which indicates that the Highway Commission has allowed 47 days liquidated damages to date out of the 80 requested. May we kindly be advised of the reason why the full amount was not granted so that we may learn from the pole manufacturer if they wish to press for the 33 days balance.

Very truly yours,

SIMS ELECTRIC, INC.

Ray O. Sims

ROS:ls

RECEIVED
APR 30 1970
R. V. COTTON
Resident Bridge Engineer

NOTED
FLOYD QUERY

RECEIVED
MAY 4 - 1970
FOR FILING

108-1619
7277

May 1, 1970

Maryland Casualty Co.
Baltimore 3
Maryland

Gentlemen:

On April 29, 1970, we wrote to you concerning release of final payment on Contract No. 7277 awarded to Sims Electric, Inc., for a traffic signal installation on Washington Street at 7th Street in Oregon City.

Final payment on this contract is $600 and the total contract amount is $9,436. No work was performed under force account.

Very truly yours,

Floyd Cherry, Secretary

Encl.

cc Sims Electric, Inc.
721 S.E. Oak Avenue
Roseburg, Oregon 97470

Bailey and Ashenurst Ins., Inc.
630 S. E. Rose
Roseburg, Oregon 97470

Frank Morgan
Ivan Nordhorst
V. E. Skeen
Attn: John Kerr
L. W. Halsey

RECEIVED
APR 28 1970
FOR FILING
103-1619
7277

April 28, 1970

Oregon State Highway Commission

Gentlemen:

Work was completed March 10, 1970, on Contract No. 7277. The contract was with Sims Electric and was for a traffic signal installation on the Washington Street at 7th Street (Oregon City) Section of the Cascade Highway in Clackamas County.

As the contractor has completed all work according to specifications, I recommend that you accept the project effective April 28, 1970, and that you concur in this procedure at the Commission meeting on June 2.

It is assumed that if you have no objections to this action and you do not advise me to the contrary, I may consider the matter has your approval.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Query
R. L. Porter
Tom Edwards
F. B. Klaboe
Victor D. Wolfe
V. E. Skoog
Ivan Merchant
F. D.Morgan
L. H. Young
L. W. Rulien

srb rr

RECEIVED
JUN 2 - 1970

103-1619
7277

3 L
4-21-70
#1

April 28, 1970

Sims Electric, Inc.
721 S. E. Oak Avenue
Roseburg, Oregon 97470

Gentlemen:

The State Highway Commission at its meeting on April 21, 1970, considered your request for an extension of time of 60 days on Contract No. 7277 for a traffic signal installation at 7th and Washington Streets in Oregon City.

Careful consideration was given to the reasons you submitted. However, in light of the available facts and the provisions of the contract, the Commission granted you a 47-day extension, without assessment of liquidated damages.

If there are pertinent facts which have not yet been considered, you should contact the Resident Engineer, the Division Engineer, or the Construction Engineer in the Salem Office.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

fkm
cc F. D. Morgan
I. D. Merchant
V. E. Skoog
L. W. Rulien
R. V. Cotton

RECEIVED
APR 9 - 1970
FOR FILING

103-1619

7277

April 8, 1970

Oregon State Highway Commission

Gentlemen:

Request for Extension of Time
No. 1
April 21, 1970 meeting

Sims Electric Inc., contractor for installation of traffic signals on Washington Street at 7th Street (Oregon City) on the Cascade Highway in Clackamas County, Contract 7277, has requested that he be granted an additional 80 days without assessment of liquidated damages to complete the work under this contract. The contractor contends that a strike at the plant of his pole manufacturer prevented him from completing his work within the specified time.

The contractor was allotted 150 calendar days to complete the work which forecast a completion date of December 20, 1969. The work was actually completed March 10, 1970, with 230 calendar days charged. This is an overrun of 80 calendar days.

Union Metal Manufacturing Company was the contractor's pole supplier. Its Long Beach, California, plant was closed by strike during the period July 19, 1969, to September 2, 1969, a total of 45 calendar days. Allowing for a seven-day plant start-up time to get back into production after an extended strike is reasonable. This constitutes a 52-day curtailment of operations in the manufacturer's plant. The work-day count on this contract began on July 24, 1969, or five days after the start of the strike. The net delay to the contractor's operations was, therefore, 47 days.

The strike is a condition beyond the contractor's control and I recommend that the contractor be granted a 47-day extension without assessment of liquidated damages and that he be assessed liquidated damages for the remaining 33 days consumed. This amounts to an assessment of $990.

This matter will be on the agenda for your consideration at the April 21 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Query
R. L. Porter
Tom Edwards
Victor D. Wolfe
F. D. Morgan
Ivan Merchant
V. E. Skoog
L. W. Rulien

WJH:dh sr

RECEIVED
MAR 21 1970
BRIDGE DIVISION

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7277 Contractor Sims Electric, Inc.

Highway Cascade

Section Washington St. @ 7th Street (Oregon City)

Kind of Work Traffic Signal Installation

It is recommended that the request for increase in the number of workdays within which to complete said contract be **DENIED** or **GRANTED**. The reasons for such recommendation are as follows:

Grant 47 days without assessment of liquidated damages due to strike in material supplier's plant. Denied request for additional 33 days of total 80-day overrun. Recommend assessment of liquidated damages for 33 days.

Recommended for Approval:

Division Engineer

Construction Engineer or Bridge Engineer

State Highway Engineer

Contract No.	7277
Project designation	-- State-Federal
Date awarded	July 11, 1969
Work started	Oct. 20, 1969
Per cent completed	100%, 3/10/70 Date
No. of Workdays Allowed	150
No. of Workdays Used	230
No. of Added Workdays Requested	80

B-380 (Rev.)—6M—9-64

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon 97310

Date March 16, 1970

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 150 days to 230 days, within which to complete our Contract No. 7277, without the assessment of liquidated damages. The said contract is described as follows:

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows: Work was prevented from November 1, 1969 through March 1, 1970 because of strikes at the pole manufacturers' plant, making it impossible for the poles to be delivered. The scope of the strikes was outlined in Pacific Union Metal's letter of December 1, 1969, a copy of which has been forwarded previously. Further information is contained in their letter of March 10, 1970, a copy of which is attached.

Respectfully submitted,

SIMS ELECTRIC, INC.
Contractor

By Ray D. Sims

CONSENT OF SURETY

Date MARCH 16, 1970

We, MARYLAND CASUALTY COMPANY

....., as

surety on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

J. B. Bailey
Attorney-in-fact

(SEAL)

J. B. Bailey
Resident Agent

103-1619 7277

FORM E-1 (REV 12-64)

OREGON STATE HIGHWAY DEPARTMENT

FIELD ENGINEER'S WEEKLY REPORT

FOR CONSTRUCTION PROJECTS ONLY
CONSTRUCTION AND BRIDGE DIVISIONS

SECTION: Washington St. at 7th St., Oregon City		WEEK ENDING: 3-14-70
		SECTION PREFIX: 103-1619
HIGHWAY: Cascade		COUNTY: Clackamas
NAME OF JOB: Wash. St. at 7th St.	KIND OF WORK: Traffic Signal Installation	
CONTRACTOR: Sims Electric, Inc.	CONTRACT NUMBER: 7277	FEDERAL AID PROJECT NUMBER: -
DATE OF CONTRACT: July 11, 1969	DATE WORK STARTED: Oct. 20, 1969	ESTIMATED COMPLETION DATE: March 10, 1970
AVERAGE FORCE ON PROJECT FOR THE WEEK: MEN: 2 SUPERVISION:	SPECIFIED WORK DAYS	WORK DAYS USED
	SPECIFIED CALENDAR DAYS 150	CALENDAR DAYS USED 230
	SPECIFIED COMPLETION DATE	PERCENT OF TIME ELAPSED 153%
PROJECT AUTHORIZATION: $ 11,908.00		PERCENT OF CONTRACT COMPLETED BASED ON ESTIMATED COST 100%
EXCLUSIVE OF ENGINEERING: $ 10,868.00	ENGINEERING AUTHORIZATION $ 1,040.00	PERCENT OF CONTRACT COMPLETED BASED ON TOTAL AUTHORIZATION
ESTIMATED COST OF COMPLETED PROJECT, EXCLUSIVE OF ENGINEERING $ 10,400.00	ENGINEERING COST TO DATE $ 916.30	DATE PROJECT WAS COMPLETED:
ESTIMATED PERCENT: OVERRUN / UNDERRUN 4 %	PERCENT OF AUTHORIZATION 88 %	March 10, 1970

ESTIMATED PERCENT COMPLETE (ROADWORK)

CLEARING	DRAINAGE	GRADING	BASE	OIL AND/OR PAVE.	MAT'L. PROD.		

	GRADING	SURFACING	MAINTENANCE MATERIALS	OIL & BITUMINOUS MACADAM	PAVING
MILES IN PROJECT					
MILES PARTIALLY COMPLETED					
MILES COMPLETED					
TOTAL ESTIMATED QUANTITIES (CONTRACT)					
TOTAL QUANTITIES CORRECTED TO DATE					
ESTIMATED QUANTITIES MOVED OR PLACED TO DATE					
AVERAGE DAILY QUANTITIES					
AVERAGE DAILY QUANTITIES NECESSARY TO COMPLETE PROJECT ON TIME					
NUMBER OF SHIFTS PER DAY					
HOURS PER SHIFT					

EQUIPMENT USED DURING THE WEEK:

(1) Pickup Truck (1) Ladder Truck

ESTIMATED PERCENT COMPLETE (STRUCTURES)

BRIDGE NO.								
PERCENT								

	WEATHER	WORK DAYS CHARGED	HOURS DELAY	CAUSE OF DELAY
SUNDAY	Mostly Sunny			
MONDAY	Mostly Sunny			
TUESDAY	Fair			
WEDNESDAY	Showers			
THURSDAY	Showers			
FRIDAY	Cloudy			
SATURDAY				

Routing

Morgan — Pease

Decker — Swan

Bond — Glenn

Walker — Lloyd

Boehme — Gallagher

Johnson — Stein

RECEIVED
MAR 16 1970
CONSTRUCTION DIVISION

BEN GIFFORD

NOTED
R. D. CHURCH

GENERAL DESCRIPTION OF ACTIVITIES FOR THE WEEK	
SUNDAY	No work.
MONDAY	Grout under poles & hook up controls. Repair AC trench patches.
TUESDAY	Remove old signal & install switch in cabinet. Traffic signals were put into operation at 10:40 A.M. Installation of traffic signals completed.
WEDNESDAY	Clean up site.
THURSDAY	Clean up site & adjust one signal head. Cleaning up of the site & removal of equipment completed.
FRIDAY	
SATURDAY	

REMARKS

Status: Complete

Const. Div. (2)
Bridge Div.
Traffic Div.
Division Engr.
File

SIGNED Warren Richards LOCATION Milwaukie

for R. V. Cotton

PRIME RESIDENT SUBMIT 2 COPIES. WHEN BRIDGES AND GRADING BOTH ARE INVOLVED, SUBMIT 3 COPIES.

SP-F&R

RECEIVED
JUL 28 1969
FOR FILE
103-1619
7277

July 28, 1969

Sims Electric, Inc.
711 S.E. Oak Avenue
Roseburg, Oregon 97470

Gentlemen:

We enclose for your files a fully executed copy of the following described contract which was awarded to you by the State Highway Commission:

Contract No. 7277 for traffic signal installation on Washington Street at 7th Street in the city of Oregon City on the Canemah Highway in Clackamas County.

A copy of this contract is also being sent to the surety on your performance bond.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

mr

Enclosure

cc: Maryland Casualty Company
Bailey & Dellenmarti Insurance, Inc.
D. J. Barbee
F. D. Morgan
I. D. Merchant
L. W. Bulick
R. V. Cotten

RECEIVED
SEP 26 1969
FOR FILING
103-1619
7277

July 11, 1969

AGENDA
AUG 1 9 1969
3Q

Sims Electric, Inc.
721 S.E. Oak Avenue
Roseburg, Oregon 97470

Gentlemen:

The State Highway Commission on July 3, 1969, accepted your proposal for traffic signal installation on Washington Street at 7th Street in the city of Oregon City (Cascade Highway) in Clackamas County for the sum of $10,400 and referred it to the State Highway Engineer with authority to award the contract as soon as approval of the City of Oregon City is received and the sum of $5,954 is deposited by the City.

These conditions were fulfilled and the State Highway Engineer today awarded you the project, which has been assigned Contract No. 7277.

Enclosed are three copies of this contract. Two of these copies should be signed on the contract and bond pages and returned to this office for completion. Please follow exactly the instructions given on the blue slip attached to the contract.

The third copy of the contract stamped "Advance Copy to be Retained by Contractor" is furnished for your information pending receipt of a fully executed copy.

The calendar day count on this contract will begin July 23, 1969.

Very truly yours,

Floyd Quarry, Secretary
OREGON STATE HIGHWAY COMMISSION

cc
Enclosures

bc: Pacific Builder & Engr., Inc., Seattle, Wash.
Daily Journal of Commerce, Seattle, Wn., & Portland, Ore.
Frank Morgan
D. J. Barbee
I. D. Merchant
William Geibel (SAIF)
L. W. Rulien
R. V. Cotton

DEPT
JUL 1 1969
FOR FILING
103-1619
7277

June 30, 1969

Mr. Alfred Simonson
General Manager
City Hall
Oregon City, Oregon 97045

7562
7321

Dear Mr. Simonson:

On June 26 bids were opened for the proposed traffic signal installation at the intersection of Seventh and Washington Streets in Oregon City.

The low bid was $10,400. Engineering and contingencies are estimated to be 14½ percent of the bid, or $1,508. The total estimated cost of the installation then becomes $11,908. The City's share, or 50 percent of the estimated cost, would be $5,954.

If you will submit the City's check for $5,954, we will proceed to award the contract.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

Tom Edwards
Assistant State Highway Engineer

bc Forrest Cooper
R. L. Porter
Victor D. Wolfe
F. B. Crandall
E. S. Cox
V. E. Skoog
L. H. Young
L. W. Bulien

VPJ:ji ja

RECEIVED
JUN 27 1969
FOR FILING
103-1619
7277

4h

June 2, 1969

City of Oregon City
City Hall
Oregon City, Oregon 97045

MISC. CONTRACTS and AGREEMENTS No. 3243

1562
1321

Attention: Mr. John A. Buol
City Recorder

5-28-69

Gentlemen:

Attached for your files is a fully executed copy of an agreement covering installation of traffic signals at the intersection of 7th and Washington Streets (Cascade Highway) in your city.

We have retained a fully executed copy of this agreement for the Commission's files.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

fbm
Attachment

cc F. B. Crandall
(Conformed copy attached)

RECEIVED
APR 29 1969

FORWARDED
103-1619
7277

April 29, 1969

7321

Oregon State Highway Commission

Gentlemen:

An agreement has been executed with the City of Oregon City for the installation of traffic signals at the intersection of 7th and Washington Streets (Cascade Highway) in that city.

This agreement provides that the State shall do the work of the project, with the City agreeing to pay one-half the cost, maintain the installation and pay for electrical energy. The total estimated cost of this installation is $9,000, State's share to be taken from Minor Betterment Funds.

Your approval of the agreement and authority for the Secretary to sign is recommended.

This matter will be on the agenda for your consideration at the May 28 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

bc: Floyd Query
R. L. Porter
Tom Edwards
V. D. Wolfe
F. B. Crandall
E. S. Hunter
J. J. Gix
H. S. Cox
V. E. Skoog
L. W. Rulien

VPJ:njc sr

RECEIVED
JUL 26 1968
FOR FILING

103-1619
7277

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon 97310
July 25, 1968

To: Tom Edwards
Assistant State Highway Engineer
B U I L D I N G

SUBJECT: Traffic Safety Improvement Project
Washington & 7th Streets
Cascade Highway
Oregon City

In line with your question concerning traffic through 7th and Washington Streets, I had the Urban Studies Unit check this location for future traffic changes on completion of the 205 structure.

It is their opinion that Interstate 205 would have little or no effect on the traffic volume at this intersection. You will recall that this is up on top of the hill, and there are very few routes from the Interstate to this area. One would be Singer Hill which feeds into 7th Street about a block west of the intersection. The second leaves McLoughlin Boulevard just south of the railroad undercrossing and also feeds into 7th Street west of the intersection, and the third is Washington Street. This intersection tends to be the key for a large area. Completion of the new 205 bridge might possibly change the traffic distribution between 7th and Washington Streets, but it would not effect the overall volume entering the intersection.

L. E. George
Assistant Traffic Engineer

LEG:mk

Approved with backlog of programs to be completed

Copy to 7-26-68

NOTED
TOM EDWARDS

RECEIVED
JUL 25 1968
OFFICE OF
STATE HIGHWAY ENGINEER

FORM S-30 SOM 10-65

OREGON STATE HIGHWAY DEPARTMENT

RECEIVED

JUL 22 1968

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
July 22, 1968

TRAFFIC ENGINEERING

To: Tom Edwards
Assistant State Highway Engineer
B U I L D I N G

SUBJECT: Traffic Safety Improvement Project
Washington and 7th Streets
Cascade Highway
Oregon City

In our Highway Safety Improvement Inventory of Hazardous Locations on page 8, line 15, there is a project on the Cascade Highway at the above intersection. The indicated improvement is the installation of traffic signals and the estimated cost is $7,000. This project is scheduled for fiscal year 1969.

There is attached a copy of a report from the Division Office recommending the installation of signals at this intersection. The warrants for signalization are exceeded.

It is recommended that at such time as funds are available, the City be contacted and a cooperative agreement be executed.

L. E. George

L. E. George
Assistant Traffic Engineer

VPJ:ji
Attachment

Bud

RECEIVED
JUL 19 1968
OFFICE OF
STATE HIGHWAY ENGINEER

FORM E-30X—30M—7-66 SP*23657-734

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Portland, Oregon 97202
June 12, 1968

To: F. B. Crandall
Traffic Engineer
S A L E M

SUBJECT: 1969 Fiscal Budget Project
Cascade Highway
Oregon City
Washington Street At 7th Street
ORE213 - Hwy. No. 160 - M.P. 15.02

This section of the Cascade Highway (ORE213) on 7th Street, between Washington and Madison Streets in the City of Oregon City is on the inventory of hazardous locations to be improved during fiscal year 1969 by the installation of a traffic signal at the intersection of 7th and Washington.

By way of historical background, this intersection was investigated during 1965 and recommendations at that time were for signalization. The City had inadequate funds for the project. There was some parking removal accomplished to allow for the striping of additional approach lanes on ORE213. This installation was made March 28, 1966.

The attached sketch map shows existing physical conditions and traffic control at this intersection. A 16-hour manual traffic count taken on July 9 and 11, 1968, as factored to 24 hours revealed 7,606 vehicles (42%) entering from the north and south and 10,600 (58%) entering from the east and west. There were a total of 18,206 vehicles entering the intersection. The major left turn movement was from the north leg to the east leg on ORE213. The major right turn movement was the reverse from east to north. Traffic entering the intersection from the north leg shows 2,720 vehicles making the left turn, 1,615 traveling straight through and 601 making the right turn. There were 6,440 vehicles entering from the east of which 2,588 made the right turn, 3,540 traveled straight through and 312 made the left turn. The entering volumes from the south and westerly legs are lighter movements, and most of these proceed straight through the intersection. The traffic volumes at this intersection meet the minimum warrants for the installation of a traffic signal.

During the period from January 1, 1964, through December 31, 1967, there were 43 reported accidents. The predominant type accidents were the 12 angle, 10 rear-end, 14 turning movement and 5 pedestrian. There were no fatalities, but 15 persons were injured. Five of these were pedestrians. During the last 12 months of the study period, there were 6 accidents of a type preventable by the installation of a traffic signal.

Attached you will find the computation sheets showing the computed capacity of this intersection based on a level of service "C". This shows a fifty-fifty split in the green time, and would indicate the desirability of installing a pre-timed traffic signal. It is recommended that a two-phase pre-timed traffic signal be installed at an estimated cost of $7,500 to be shared on a fifty-fifty basis with the City of Oregon City, with the City maintaining and paying the power consumption.

ORIGINAL SIGNED BY
R. W. FAILINGER

Ronald W. Failinger
Division Traffic Engineer

RWF/jem
Enclosure
cc: F. B. Grundell
L. V. Rulien

3-3710 Milo McIver State Park Section, 1969
W. of Estacada (Paving)
#7278

RECEIVED
OCT 14 1969
FOR FILING

3-3710

7278

October 14, 1969

St. Paul Fire and Marine Insurance Company
Portland Office
1300 N. E. Irving Street
Portland, Oregon 97232

Gentlemen:

Contract No. 7278 awarded to K. F. Jacobsen and Company, Inc., for paving in Nils Helver State Park in Clackamas County was completed on August 13, 1969, and accepted by the Highway Commission on October 13, 1969.

Final payment in the amount of $2,096.38 will be released to the contractor after October 21, 1969. The total contract amount is $45,011.92 and no work was performed under force account.

No claims for labor or material have been filed with us.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

fhm

cc K. F. Jacobsen & Co., Inc.
2611 S. E. 4th Avenue
Portland, Oregon 97202

Victor S. Risley
Board of Trade Building
Portland, Oregon 97204
L. W. Rullen
Frank Morgan
V. E. Skoog
Attn: John Harr

RECEIVED
OCT 14 1969
FOR FILING

3-3710
7278

October 13, 1969

Oregon State Highway Commission

Gentlemen:

Work was completed August 13, 1969, on Contract No. 7278. The contract was with K. F. Jacobsen & Company, Inc., and was for paving on the park road portions of the Milo McIver State Park in Clackamas County.

As the contractor has completed all work according to specifications, I recommend that you accept the project effective October 13, 1969, and that you concur in this procedure at the Commission meeting on November 18.

It is assumed that if you have no objections to this action and you do not advise me to the contrary, I may consider the matter has your approval.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Query
R. L. Porter
Lloyd P. Shaw
F. B. Klaboe
Victor D. Wolfe
V. E. Skoog
David G. Talbot
F. D. Morgan
L. H. Young
L. W. Rulien

srb sr

3-3710 C 7278 C C

FORM E-1 (REV 12-66)

OREGON STATE HIGHWAY DEPARTMENT

FIELD ENGINEER'S WEEKLY REPORT

FOR CONSTRUCTION PROJECTS ONLY
CONSTRUCTION AND BRIDGE DIVISIONS

SECTION: Milo McIver State Park		WEEK ENDING: August 15, 1969
		SECTION PREFIX: 3,3710
HIGHWAY: Park Road		COUNTY: Clackamas
NAME OF JOB: Milo-McIver State Park	KIND OF WORK: Paving	
CONTRACTOR: K. F. Jacobsen & Co., Inc.	CONTRACT NUMBER: 7278	FEDERAL AID PROJECT NUMBER: State
DATE OF CONTRACT: July 3, 1969	DATE WORK STARTED: July 25, 1969	ESTIMATED COMPLETION DATE: August 13, 1969
AVERAGE FORCE ON PROJECT FOR THE WEEK: MEN 21 SUPERVISION 1	SPECIFIED WORK DAYS	WORK DAYS USED
	SPECIFIED CALENDAR DAYS 60	CALENDAR DAYS USED 21
	SPECIFIED COMPLETION DATE	PERCENT OF TIME ELAPSED 35
PROJECT AUTHORIZATION: $ 56,937.98		PERCENT OF CONTRACT COMPLETED BASED ON ESTIMATED COST 100
EXCLUSIVE OF ENGINEERING: $ 51,965.23	ENGINEERING AUTHORIZATION $ 4,972.75	PERCENT OF CONTRACT COMPLETED BASED ON TOTAL AUTHORIZATION
ESTIMATED COST OF COMPLETED PROJECT, EXCLUSIVE OF ENGINEERING $ 44,699.00	ENGINEERING COST TO DATE $ 1,200.00	DATE PROJECT WAS COMPLETED: August 13, 1969
ESTIMATED PERCENT [redacted] UNDERRUN 14 %	PERCENT OF AUTHORIZATION 24 %	

ESTIMATED PERCENT COMPLETE (ROADWORK)

CLEARING	DRAINAGE	GRADING	BASE	OIL AND/OR PAVE.	MAT'L. PROD.		
		100	100	100			

	GRADING	SURFACING	MAINTENANCE MATERIALS	OIL & BITUMINOUS MACADAM	PAVING
MILES IN PROJECT		1.86		1.86	1.86
MILES PARTIALLY COMPLETED					
MILES COMPLETED		1.86		1.86	1.86
TOTAL ESTIMATED QUANTITIES (CONTRACT)		670		45	4,800
TOTAL QUANTITIES CORRECTED TO DATE		335		44	4,517
ESTIMATED QUANTITIES MOVED OR PLACED TO DATE		335		44	4,517
AVERAGE DAILY QUANTITIES		0		0	600
AVERAGE DAILY QUANTITIES NECESSARY TO COMPLETE PROJECT ON TIME					
NUMBER OF SHIFTS PER DAY					1
HOURS PER SHIFT					9

EQUIPMENT USED DURING THE WEEK: 3 rollers, 1 paver, 1 broom, 17 trucks, 1 water wagon

ESTIMATED PERCENT COMPLETE (STRUCTURES)

BRIDGE NO.								
PERCENT								

	WEATHER	WORK DAYS CHARGED	HOURS DELAY	CAUSE OF DELAY
SUNDAY August 10	Fair	1		
MONDAY August 11	Fair	1		
TUESDAY August 12	Fair	1		
WEDNESDAY August 13				
THURSDAY August 14				
FRIDAY August 15				
SATURDAY August 9				

Routing
Morgan — Peace
Decker — Swan
Bond — Glenn
Walker — Litchfield
Boehme — Gallagher
Johnsen — Stein

RECEIVED
AUG 1 9 1969
CONSTRUCTION DIVISION

BEN GIFFORD

NOTED
R. D. CHURCH

GENERAL DESCRIPTION OF ACTIVITIES FOR THE WEEK	
SUNDAY August 10	No work
MONDAY August 11	Contractor paved Class "B" A.C., 3,800' of right lane.
TUESDAY August 12	Contractor completed paving, cleaned up project and removed all equipment, project is complete.
WEDNESDAY August 13	Project finished
THURSDAY August 14	Project finished.
FRIDAY August 15	Project finished
SATURDAY August 9	

REMARKS

F I N A L R E P O R T

Semi-Final will be submitted about Aug 31

SIGNED for Maurice D. Payne R.R. Cameron LOCATION Milwaukie, Oregon

PRIME RESIDENT SUBMIT 2 COPIES. WHEN BRIDGES AND GRADING BOTH ARE INVOLVED. SUBMIT 3 COPIES.

SP-F216

RECEIVED
JUL 24 1969
FOR FILING

3-3710

7278

July 23, 1969

E. F. Jacobsen & Co., Inc.
2611 S.E. 4th Avenue
Portland, Oregon 97202

Gentlemen:

We enclose for your files a fully executed copy of the following described contract which was awarded to you by the State Highway Commission:

Contract No. 7278 for paving in the Milo McIver State Park in Clackamas County.

A copy of this contract is also being sent to the surety on your performance bond.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

ur

Enclosure

cc: St. Paul Fire & Marine Insurance Co.
Victor A. Bisley
D. J. Barbee
F. D. Morgan
I. D. Merchant
L. W. Malien
R. R. Cameron
David G. Talbot

RECEIVED
JUL 9 - 1969
FOR FILING
3-3710
7278

July 9, 1969

E. F. Jacobsen & Co., Inc.
3611 S.E. 4th Avenue
Portland, Oregon 97202

Gentlemen:

Enclosed are three copies of Contract No. 7278 for $48,727.50 awarded to you by the State Highway Commission on July 3, 1969. This contract is for paving in the Hills Creek State Park in Lincoln County.

Two of these copies should be signed on the contract and bond pages and returned to this office for completion. Please follow exactly the instructions given on the blue slip attached to the contract.

The third copy of the contract stamped "Advance Copy to be Retained by Contractor" is furnished for your information pending receipt of a fully executed copy.

The calendar day count on this contract will begin July 21, 1969.

Very truly yours,

Floyd Carey, Secretary
OREGON STATE HIGHWAY COMMISSION

cc
Enclosures

bc: Frank Morgan
D. J. Barbee
L. D. Merchant
William Gaibel (SAIF)
L. W. Salisbury
R. H. Cameron
D. G. Talbot

RECEIVED
MAY 2 - 1969
FOR FILE
3-3710
7278

May 2, 1969

Oregon State Highway Commission

Gentlemen:

Continued development of Helver State Park in Clackamas County has resulted in a roadway being graded from the upper level of the park to a point on the Clackamas River about one-half mile below River Mill Dam. Paving of that roadway, a parking lot, and a boat ramp will open up the southerly half of the park area to more intensive use.

It will be advantageous to place under contract a project costing $80,000 to provide rock surfacing and asphaltic concrete pavement on the roadway, parking lot, and boat ramp.

A bid opening is scheduled for June 28. To permit preparation of bidding plans and advertising prior to that date, Chairman Glenn Jackson gave approval to the project on May 1, 1969.

This matter will be on the agenda for the May 28 Commission meeting for confirmation.

Very truly yours,

Forrest Cooper
State Highway Engineer

bc: Floyd Quary
R. L. Porter
Lloyd P. Shaw
Victor D. Wolfe
David G. Talbot
L. H. Young
V. E. Skoog

LPS:ajw sr

RECEIVED
APR 30 1969

3-3710
7278

Salem, Oregon
April 30, 1969

Mr. Forrest Cooper
State Highway Engineer

McIver State Park
Paving Contract

Approximately 1.6 miles of park roadway, a parking lot, and a boat ramp have been graded in the southerly half of McIver State Park. The road extends from the maintenance yard easterly to a point on the Clackamas River about one-half mile north of River Mill Dam.

If Highway Commission approval to contract approximately $80,000 of surfacing and paving can be obtained, the project could be available for the June 28 bid opening. I would appreciate pre-Commission meeting approval if that is possible.

A draft of a letter to the Commission is attached for your consideration.

Lloyd P. Shaw
Assistant State Highway Engineer

LPS:ajw
Attachment
cc R. L. Porter

308-1707 Brookings (Fern Ave.) Section 1969
(Grading and paving)
#7279

(NH) 3670

RECEIVED
APR 1 - 1970
FOR FILING
308-170
7279

March 31, 1970

Mr. Glenn L. Jackson, Chairman
Oregon State Highway Commission
216 West Main Street
Medford, Oregon 97501

Dear Mr. Jackson:

We have reviewed the background of the Da-Tone Construction Company claim which is set forth in Darral Allsup's March 16 letter to you concerning the Brookings (Fern Avenue) Section, Contract No. 7279. An almost identical letter was directed to our Roseburg Division Office last fall and they answered the contractor on October 21, declining the claim. Mr. Allsup subsequently directed the same letter to the Secretary of the Highway Commission on December 11 and this was answered by our Construction Engineer on December 26, confirming the denial of the claim and the reasons therefor.

This was a small city allotment project, construction of which is covered by an agreement dated January 23, 1969, between the City of Brookings and the Highway Commission. Item 3 of this agreement covering "THINGS TO BE DONE BY THE CITY" states that the City will relocate, or cause to be relocated or reconstructed, all utilities.

The plans for the project (awarded to Da-Tone Construction on July 24, 1969) show a six-inch cast iron water line existing in the street area to be improved plus an existing ten-inch sanitary sewer also located throughout the project. The plans (Sheet 2) also include a note "Utilities to be adjusted by others". The presence of the utility facilities was therefore clearly indicated to the contractor.

The water line is owned by the Brookings Water Company and apparently some question arose at about the

time the project was contracted as to whether the water company or the City was obligated to pay for the cost of required adjustment or relocation of the water line. Attorneys became involved on both sides. The contractor's allowable time count started August 5. The utility work was all cleared of conflict by August 25. The utility relocation work did interfere with some of the contractor's work and delayed about half of his grading work, but the contractor did make some progress during this time. The contract was completed September 29 with 16 days liquidated damages accrued for which a complete time extension was granted at your November 18, 1969 meeting.

The standard specifications require that the contractor cooperate with utilities and that they be given a reasonable time to accomplish their relocations. The water line work particularly appears to have been somewhat slow in getting started in this instance, apparently because of the question of responsibility for the cost. We doubt that the time used was more than could be termed "reasonable". We have for many years been very reluctant to recognize any validity of claims based on idle time or delay because of their adverse potential.

We do not believe there is a proper basis for adjustment to the contractor here and furthermore, we find some inaccuracy in the claim derivation in that some of the equipment listed was actually used during the 20 days claimed or was not on the jobsite for some of the days claimed.

Another facet of a project of this nature concerns the funding of any additional payment to the contractor that might evolve. The actual cost of the project exceeded the $25,000 limitation for the State funding and by terms of the agreement, all costs above that amount are assumed by the City. Any additional payment to the contractor would have to be clearly proper and justifiable to the City.

We are again sending the contractor a letter declining his claim. He may ultimately choose to carry it to our Claims Review Board for a final determination.

Very truly yours,

Forrest Cooper
State Highway Engineer

Att.
cc: R. L. Porter Victor D. Wolfe H. S. Cox
F. B. Klaboe C. T. Keasey F. D. Morgan

JAB:fw sr

RECEIVED
APR 1 - 1970
FOR FILING
308-1707
7279

March 31, 1970

3303

Mr. Darrel Allsup
Da-Tone Construction Company
Post Office Box 1140
Brookings, Oregon 97415

Dear Mr. Allsup:

Re: Brookings (Fern Avenue) Section
Contract No. 7279

This will reply to your March 16 letter to the State Highway Commission concerning your claim for $6,081.20 arising from interference and delay in adjustment of utilities within the project area.

I find that your claim has been considered earlier and at other levels in our Division and that you have previously been formally advised of its rejection.

The presence of the water and sewer lines within the limits of the project is clearly shown on the project plans. A note on Sheet 2 of the plans points out that utilities are to be adjusted by others.

Article 7-26 of the Standard Specifications requires that "reasonable" time be given to the utilities for the performance of their work. Although we can appreciate that early relocation of the utilities would have in turn permitted earlier accomplishment of some of your work, we would not judge that the time actually required for the utility relocations was unreasonable.

The utility adjustment time on this project is not necessarily a right-of-way delay. Since you do not state a specification basis for your claim, we can only assume that you may have so construed. A supplemental provision in the contract under Section 8-11 provides no relief other than time extension for a true right-of-way delay. The Highway Commission has approved your request for time extension and no liquidated damages for late completion have been assessed.

We note that you were able to accomplish some work prior to August 23, particularly on drainage items and almost half of the grading, and had accomplished about 19 percent of the money value of the contract by the week ending August 23. You apparently had people working the entire week ending August 23.

Considering the above, I do not believe there is a valid basis for an adjustment in your favor in this situation. If after reconsideration you want to pursue the claim further, you can make written request to present your position in person before the Highway Claims Review Board. This is a five-member panel which exists for the specific purpose of reviewing unresolved contract claims. Further information on this procedure could be secured from either the Roseburg Division office (C. T. Kassey or John Quiner II) or from John Bond, Secretary of the Claims Review Board in the Construction Division in Salem.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: City of Brookings

Glenn L. Jackson

bc: R. L. Porter
F. B. Klaboe
Victor D. Wolfe
F. D. Morgan
C. T. Kassey
H. S. Cox

JAB:fw sr

FORM S-80 9694 10-68

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon 97310
March 18, 1970

SUBJECT:

To: Mr. F. D. Morgan
Construction Engineer
B U I L D I N G

Attention Mr. John Bond

I enclose a copy of a claim on Contract 7279, Fern Street, Brookings, for lost time for equipment. This claim apparently came through Mr. Jackson and Mr. Bruno and we will have to advise them of our analysis.

Please give this a thorough working over and rough draft a letter for my signature to both the company and Mr. Jackson explaining in detail, quoting chapter and verse of the specifications, your recommendation, prior to March 25.

F. B. Klaboe
Assistant State Highway Engineer

FBK:srb

Enc.

cc: Victor D. Wolfe

Routing

Morgan		Pease
Decker	RECEIVED	Swan
Bond		Glenn
Walker	MAR 19 1970	Litchfield
Boehme		Gallagher
Johnsen	CONSTRUCTION DIVISION	Stein

RECEIVED
MAR 19 1970
FOR FILING

308-1707

7279

Salem, Oregon 97310
March 18, 1970

Mr. F. D. Morgan
Construction Engineer
B U I L D I N G

(3303)

Attention Mr. John Bond

I enclose a copy of a claim on Contract 7279, Fern Street, Brookings, for lost time for equipment. This claim apparently came through Mr. Jackson and Mr. Bruno and we will have to advise them of our analysis.

Please give this a thorough working over and rough draft a letter for my signature to both the company and Mr. Jackson explaining in detail, quoting chapter and verse of the specifications, your recommendation, prior to March 25.

F. D. Klaboe
Assistant State Highway Engineer

FDK:srb

Enc.

cc: Victor D. Wolfe

DA-TONE CONSTRUCTION CO.
P. O. BOX 1140
BROOKINGS, OREGON 97415
March 16, 1970

19070

Oregon State Highway Commissioners
Highway Building
Salem, Oregon 97310

Dear Sirs:

Re: Contract #7279

We request at this time that we be given reimbursements for loss time for our equipment due beyond our control for 20 days on the Grading & Paving on Fern Street in Brookings, Oregon; Contract #7279.

We were completely stopped from doing any work on this project on August 6th, through August 25th, 1969 (20 work days). The Brookings Water Co. was not notified until August 4th that they were to lower their water lines and laterals below the sub base on Fern Street from Pacific St. to Chetco Ave. They did not hire a special crew for this job, but used their regular maintaince crew on this job as well as their regular jobs and did not finish the water lines until August 24th. The City of Brookings had not lowered the sewer lines and laterals below the sub base of the road from Pacific St. to Chetco Ave. on Fern St. and did this work during this same period of time. Therefore we were unable to use our equipment which was located on Fern St. waiting to complete this project.

Our loss is listed as follows:

1-977 Loader @ $25.00 per hour @ 8 hours per day	$200.00
1-Mack Dump Truck @ $13.50 per hour @ 8 hours per day	$108.00
1-10 to 12 Ton (3 wheel) Roller @ $12.50 per hour @ 8 hours per day	$100.00

This gives us a loss of $408.00 per day, less wages for:

Loader operator @ $6.20 per hour @ 8 hours per day	$ 49.60
Truck driver @ $5.28 per hour @ 8 hours per day	$ 42.24
Roller operator @ $6.20 per hour @ 8 hours per day	$ 49.60

This was less total wages per day of $141.44.

This is a loss to us at $266.56 a day @ 20 days	$5,331.20
Plus loss on payroll for salaried Superintendent for	$750.00
Total loss for 20 days:	$6,081.20

We request that you kindly consider this loss and reimburse us for the total of $6,081.20

Sincerely:

Darrel Allsup
Owner

DA/jcm

RECEIVED
MAR 17 1970
OFFICE OF
STATE HIGHWAY ENGINEER

OCA

OREGON STATE HIGHWAY DEPARTMENT

FORM A-190 (3-64)

HIGHWAY DEPARTMENT INVOICE

NO. 101000

DATE	BILLING REQ. NO.	YOUR ORDER NO.
1-20-70	CE 1966	

CREDIT DISTRIBUTION

[illegible]-1103-[illegible] $799.38
[illegible]-1701-[illegible] $15,981.97

RECEIVED
JAN 20 1970
ENGINEER
COUNTY & CITY DIVISION

City of Brookings
P.O. Box [illegible]
Brookings, Oregon 97415

MAKE CHECKS PAYABLE TO
THE OREGON STATE HIGHWAY DEPARTMENT

SEND REMITTANCE TO:
OREGON STATE HIGHWAY DEPARTMENT
STATE HIGHWAY BUILDING
SALEM, OREGON 97310

DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
Attention Mrs. Marjorie Wallerman, City Recorder			
Final Billing Special City Allotment project on Fern Avenue. Contract No. 7979. Covered by Agreement Dated 3-25-69.			
City's Advance Deposit			15,693.00
As per attached statement:			
Final cost			
Agreed State share		$1,977.39	
City's agreed share		75,000.00	
			16,977.39
Balance Due			1,279.39

ACKNOWLEDGEMENT OF BILLING REQUEST

Cash Received with Request $.....

By .....

NOTED
R. H. PRANGE

NOTED
H. S. COX

Noted
Oscar H. Norberg

NOTED
RICHARD UNREIN

NOTED
P. B. Arensmeier

NOTED
[illegible]

NOTED
HAROLD REYNOLDS

NOTED
DON HARWELL

OREGON STATE HIGHWAY DEPARTMENT

Form A-181—(7-68)
SP"F"94

Request for Outside Billing

(Or Advice of Cash Transaction)

Address invoice to: City of Brookings
P.O. Box "C"
Brookings, Oregon 97415
Attention of Mrs. Marjorie McKernan
City Recorder

Request No. (assigned by staff engineer or head of division) CC 1208

Date January 16, 1970

Payer's Order No. (if any)

Department Order No. (if any)
(Number of "Order to Render Service")

Description and Authority: (Describe the service rendered, stating kind of service, location, etc. Also refer to agreements, letters and orders by which payer authorized the service.)

Final Billing: Special City Allotment project on Fern Avenue
Contract No. 7279
Covered by Agreement dated 1-23-69

Itemized Statement:

Quantity	Unit	Description	Unit Price	Amount
		City's advance deposit		$15,695.00
		As per attached statement:		
		Final Cost	$36,637.43	
		Agreed State share	25,000.00	
		City's agreed share		16,974.32
		Payment due State		1279.32

If payer has made payment for this service, indicate the amount of payment. $

If payer has made a deposit with the Department to guarantee payment, indicate the amount of the deposit. $15,695.00

Is this a partial or final request for billing? Final

If there have been any previous requests for billing in connection with this same service, indicate the total amount of all previous requests. $

Give the number of the last previous request in connection with this same service.

Credit distribution:
308-1405—295 972.35
308-1707-295 15,981.97

Submitted by:

Approved:
Division Engineer

Approved:
Department Head or Staff Engineer

Instructions: The original and duplicate copies shall be forwarded through the division engineer to the staff engineer or division head. Staff engineer or division head will forward original copy to the Accounting Division. Additional copies may be prepared for and retained by the division office and other field offices concerned. If the request is to be accompanied by a payment, an additional copy shall be submitted for the use of the Accounting Division.

Date Jan. 16 1970

OREGON STATE HIGHWAY DEPARTMENT

ITEMIZED STATEMENT OF COSTS
SPECIAL CITY ALLOTMENT PROJECT

Program Year 1969

Contract # 7279 Prefix 308-1707 Survey Prefix 308-1403

Street Fern Avenue

City Brookings

Payments to Contractor (see attached voucher)	$ 36,037.48
Engineering and Contingencies	4944.54
* Survey: Total $ 1552.29 Prorated Share	992.35
TOTAL	41,974.32
Agreed State Share	25,000.00
Agreed City Share	16,974.32
City Advance Deposit	15,695.00
Payment due State	1279.32

Reference: Outside Billing CC 1208

* Construction Costs over 25,000 / Construction Costs = 15,981.97 x 25446 / 40,981.97 = 992.35
Portion of Preliminary Engineering Charges to Project 992.35

RU

CURRY COUNTY

CITY STREET

CONTRACT PAYMENT VOUCHER

CONTRACT NO. 7279

FEDERAL AID PROJECT NO.

SECTION
BROOKINGS /FERN AVENUE/

FORM A-20 (REV. 6-63)

NO.	ITEMS	UNITS	UNIT PRICE	QUANTITY TO
001	9N GENERAL EXCAVATION	LUMP SUM	3400.0000	10
002	9N 3/4IN-0 MATERIAL IN BASE-2INCHES THICK	SQ YDS	.3500	5,017
003	9N STONE BASE 11 1/2 IN THICK	SQ YDS	1.5000	5,116
004	9N CLASS B ASPHALT CONCRETE-3 INCHES THICK	SQ YDS	1.9500	4,886
005	9N 8-INCH SEWER PIPE	LIN FT	4.5000	15
006	9N 12-INCH SEWER PIPE	LIN FT	5.5000	58
007	9N ADJUSTING MANHOLES	ONLY	100.0000	
009	9N CONCRETE INLETS TYPE CG-1	ONLY	350.0000	
010	9N CONCRETE CURBS	LIN FT	2.3500	1,38
011	9N CONCRETE DRIVEWAYS	SQ YDS	8.0000	13
012	9N CONCRETE WALKS	SQ YDS	7.0000	26
	PRICE AGREEMENT ITEMS			
30101	9N EXC BELOW GRADE	CU YD	2.2500	38
	ADJUSTMENT ITEMS			
6001	9N LIQUIDATED DAMAGES	DAY	50.0000-	1
6001A	9N LIQU DAM TIME EXT COMM ACT 11-18-69	DAY	50.0000	1

DATE 11/25/ 69 PG. 01 7279

PREVIOUS VOUCHER NO. 15830

CHECKED BY: CP/mt

ENGINEER OR AUDITOR

TOTAL CONTRACT ITE

--- % RETAINED ON CONTRACT ITE

FORCE ACCOU

TOTAL PAYME

OUNTY	CONTRACT NO. 7279	ESTIMATE NO. 5 Post	PREFIX NO'S. Final			
	FEDERAL AID PROJECT NO.		308 1707 203 (640)		800.00 Dr.	
/FERN AVENUE/						69
	UNITS	UNIT PRICE	QUANTITY TO DATE	AMOUNT TO DATE	PREVIOUS AMOUNT	PRESENT AMOUNT
	LUMP SUM	3400.0000	100.000	3400.00	3400.00	
CK	SQ YDS	.3500	5,017.300	1756.06	1756.06	
	SQ YDS	1.5000	5,116.500	7674.75	7674.75	
ICK	SQ YDS	1.9500	4,881.200	9518.34	9518.34	
	LIN FT	4.5000	150.000	675.00	675.00	
	LIN FT	5.5000	588.000	3234.00	3234.00	
	ONLY	100.0000	3.000	300.00	300.00	
	ONLY	350.0000	7.000	2450.00	2450.00	
	LIN FT	2.3500	1,384.900	3254.52	3254.52	
	SQ YDS	8.0000	132.570	1060.56	1060.56	
	SQ YDS	7.0000	265.600	1859.20	1859.20	
	CU YD	2.2500	380.000	855.00	855.00	
	DAY	50.0000-	16.000	800.00-	800.00-	
9	DAY	50.0000	16.000	800.00		800.00
	TOTAL CONTRACT ITEMS			36037.43	35237.43	800.00
	--- % RETAINED ON CONTRACT ITEMS					
	FORCE ACCOUNT					
	TOTAL PAYMENTS			36,037.43	35,237.43	800.00

CURRY COUNTY

CITY STREET

CONTRACT PAYMENT VOUCHER

CONTRACT NO. 7279 | ESTIMATE NO. 5 Pa

FEDERAL AID PROJECT NO.

SECTION BROOKINGS /FERN AVENUE/

FORM A-20 (REV. 6-63)

NO.	ITEMS	UNITS	UNIT PRICE	QUANTITY TO DATE
101	9N GENERAL EXCAVATION	LUMP SUM	3400.0000	100.00
102	9N 3/4IN-0 MATERIAL IN BASE-2INCHES THICK	SQ YDS	.3500	5,017.30
103	9N STONE BASE 11 1/2 IN THICK	SQ YDS	1.5000	5,116.5
104	9N CLASS B ASPHALT CONCRETE-3 INCHES THICK	SQ YDS	1.9500	4,881.2
105	9N 8-INCH SEWER PIPE	LIN FT	4.5000	150.0
106	9N 12-INCH SEWER PIPE	LIN FT	5.5000	388.0
107	9N ADJUSTING MANHOLES	ONLY	100.0000	3.00
109	9N CONCRETE INLETS TYPE CG-1	ONLY	350.0000	7.0
110	9N CONCRETE CURBS	LIN FT	2.3500	1,384.9
111	9N CONCRETE DRIVEWAYS	SQ YDS	8.0000	132.5
112	9N CONCRETE WALKS	SQ YDS	7.0000	265.6
	PRICE AGREEMENT ITEMS			
30101	9N EXC BELOW GRADE	CU YD	2.2500	380.0
	ADJUSTMENT ITEMS			
6001	9N LIQUIDATED DAMAGES	DAY	50.0000-	16.0
6001A	9N LIQU DAM TIME EXT COMM ACT 11-18-69	DAY	50.0000	16.0

DATE 11/25/ 69 PG. 01 7279

PREVIOUS VOUCHER NO. 15830

CHECKED BY: CP/mt

ENGINEER OR AUDITOR

TOTAL CONTRACT ITEMS

--- % RETAINED ON CONTRACT ITEMS

FORCE ACCOUNT

TOTAL PAYMENTS

	CONTRACT NO.	ESTIMATE NO.	PREFIX NO'S.
NTY	7279	5 Post	Final
	FEDERAL AID PROJECT NO.	308 1707 203 (640)	800.00 Dr.

ERN AVENUE/

	UNITS	UNIT PRICE	QUANTITY TO DATE	AMOUNT TO DATE	PREVIOUS AMOUNT	PRESENT AMOUNT
	LUMP SUM	3400.0000	100.000	3400.00	3400.00	
	SQ YDS	.3500	5,017.300	1756.06	1756.06	
	SQ YDS	1.5000	5,116.500	7674.75	7674.75	
K	SQ YDS	1.9500	4,881.200	9518.34	9518.34	
	LIN FT	4.5000	150.000	675.00	675.00	
	LIN FT	5.5000	588.000	3234.00	3234.00	
	ONLY	100.0000	3.000	300.00	300.00	
	ONLY	350.0000	7.000	2450.00	2450.00	
	LIN FT	2.3500	1,384.900	3254.52	3254.52	
	SQ YDS	8.0000	132.570	1060.56	1060.56	
	SQ YDS	7.0000	265.600	1859.20	1859.20	
	CU YD	2.2500	380.000	855.00	855.00	
	DAY	50.0000-	16.000	800.00-	800.00-	
9	DAY	50.0000	16.000	800.00		800.00
	TOTAL CONTRACT ITEMS			36037.43	35237.43	800.00
	--- % RETAINED ON CONTRACT ITEMS					
	FORCE ACCOUNT					
	TOTAL PAYMENTS			36,037.43	35,237.43	800.00

RECEIVED
DEC 29 19

OREGON STATE
HIGHWAY DEPARTMENT

308-1707
1274

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

Da-Tone Construction Company
P.O. Box 1140
Brookings, Oregon 97415

December 26, 1969

Re: Brookings (Fern Avenue) Section
City Street
Contract No. 7279

Gentlemen:

Your most recent claim letter dated December 11 to Mr. Query has been referred to this office for reply.

We note that this is virtually the same request that was made earlier and to which Mr. Quiner replied on October 21. Since that time, a contract time extension has been granted which deleted all liquidated damages.

We must concur in the earlier rejection of your claim for loss of production while utilities were being relocated. The reasons for rejection as cited previously by Mr. Quiner are pertinent and we believe proper. We simply find no valid basis for an adjustment.

Further, and without in any way recognizing any basis, we note that some of the time when equipment was allegedly idle, it was, in fact, being used on the project and in the case of the roller, was apparently not on the project.

We therefore respectfully again deny the claim and consider this rejection to apply as of October 21, 1969.

Very truly yours,

RECEIVED
DEC 29 1969
OFFICE OF
STATE HIGHWAY ENGINEER

Forrest Cooper
State Highway Engineer

NO...
F. B. KLABOE

By F. D. Morgan
F. D. Morgan
Construction Engineer

JAB:fw:fr
bc: F. B. Klaboe
C. T. Keasey

RECEIVED
DEC 16 1969
FOR FILING
308-1707
7279

December 16, 1969

Mr. Darrel Allsup, Owner
De-Tone Construction Company
P. O. Box 1140
Brookings, Oregon 97415

Dear Mr. Allsup:

This will acknowledge your letter of December 11 concerning additional payment on Contract No. 7279 for work on Fern Street in Brookings.

Your letter is being forwarded to the Construction Engineer, Mr. Frank Morgan, for study.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

FQ:sj

cc Frank Morgan

Ds-Tone Construction Co.
P. O. Box 1140
Brookings, Oregon 97415
December 11, 1969

Mr. Floyd Query, Secretary
Oregon State Highway Department
Highway Building
Salem, Oregon 97310

Re: Contract #7279

Dear Sir:

We request at this time that we be given reimbursements for loss time for our equipment due beyond our control for 20 days on the Grading & Paving on Fern Street in Brookings, Oregon; Contract #7279.

We were completely stopped from doing any work on this project on August 5th, through August 24th, 1969 (20 work days). The Brookings Water Co. was not notified until August 4th that they were to lower their water lines and laterals below the sub base on Fern Street from Pacific St. to Chetco Ave. They did not hire a special crew for this job, but used their regular maintaince crew on this job as well as their regular jobs and did not finish the water lines until August 24th. The City of Brookings had not lowered the sewer lines and laterals below the sub base of the road from Pacific St. to Chetco Ave. on Fern St. and did this work during this same period of time. Therefore weewere unable to use our equipment which was located on Fern St. waiting to complete this project.

Our lossis listed as follows:

1-977 Loader @ $25.00 per hour @ 8 hours per day	$ 200.00
1-Mack Dump Truck @ $13.50 per hour @ 8 hours per day	$ 108.00
1-10 to 12 Ton (3 wheel) Roller @$12.50 per hour @ 8 hours per day	$ 100.00

This gives us a loss of $408.00 per day, less wages for:

Loader operator @ $6.20 per hour @ 8 hours per day	$ 49.60
Truck driver @ $5.28 per hour @ 8 hours per day	$ 42.24
Roller operator @ $6.20 per hour @ 8 hours per day	$ 49.60

This was less total wages per day of $141.44.

This is a loss to us at $266.56 a day @ 20 days	$ 5,331.20
Plus loss on payroll for salaried Superintendent for	$ 750.00
Total loss for 20 days:	$ 6,081.20

We request that you kindly consider this loss and reimburse us for the total of $6,081.20

Sincerely,

Darrel Allsup

Darrel Allsup
Owner

DA/jcm

cc: A.J.Kahler, Payroll & Claims.

2 of items granted 11-18 for 15 days
item all liquid damages

NOV 28 1969

308-1707

7279

November 28, 1969

General Insurance Co. of America
Portland Service Office
320 S.W. 6th
Portland, Oregon 97204

Gentlemen:

A post-final payment for $800 will be made to De-Tone Construction Company for grading and paving Fern Avenue in Brookings in Curry County as soon as the warrant is prepared.

The total amount paid on this contract will be $36,037.43 including the post-final payment. No force account work was performed on this contract.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

aj

cc De-Tone Construction Co.
628 Spruce
Brookings, Oregon 97415

bc Frank Morgan
Ivan Merchant
V. E. Skoog
Attn: John Herr
Carroll T. Keasey

DEC 1 - 1969
FOR FILING

OREGON STATE
HIGHWAY DEPARTMENT

308-1707
1279

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

November 28, 1969

Mr. Al Henderson
City Administrator
City Hall
Brookings, Oregon 97415

Dear Mr. Henderson:

This letter is written to confirm the meeting held November 25, 1969, in the Brookings City Hall to discuss the complaint from Mr. Don Jefferies.

After the regular meeting, Councilman Loring, Street Superintendent Lee, John Quiner and the writer discussed the four areas of complaint with Mr. Jefferies. Mr. Jefferies stated that the rain water does blow in and I believe that this statement is correct. If the City feels it is serious enough that a connection must be made, then it would appear that between 130 sq. ft. and 150 sq. ft. of sidewalk must be removed and replaced. In my opinion you can probably prevent some or most of the water from entering the station building, but the appearance of the sidewalk grade will suffer.

All other areas of complaint are considered of small consequence for the following reasons: (1) Use of the curb return radius for the pump ramp can not be permitted. (2) The grade break for the pump approach on Fern Avenue is exactly like that on Chetco Lane, and (3) the so-called foot hazard at the corner of Fern and Chetco #2, is necessary to maintain a 7" curb exposure and also to construct the sidewalk so that moisture will drain into the gutter line.

As was stated in our meeting, the Fern Avenue project cost considerably more than the $25,000 allowed for SCA projects; therefore, the City has paid all costs in excess of the $25,000 and nothing would be gained by adding corrective measures to the contract. It would appear that if the City Council deems it necessary to correct the sidewalk grade, City forces and local construction effort could accomplish the desired results most economically.

Very truly yours,

H. S. Cox
County and City Engineer

RECEIVED
NOV 28 1969
OFFICE OF
STATE HIGHWAY ENGINEER

HSC:ljt
cc: Forrest Cooper
R. L. Porter
V. D. Wolfe
F. D. Morgan
C. T. Keasey

NOTE
FORREST COOPER

FORM S-30 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Roseburg, Oregon
November 26, 1969

To: Mr. F. D. Morgan
Construction Engineer
S A L E M

SUBJECT: Fern Avenue (Brookings)
City Street Project
City of Brookings
Curry County
Contract No. 7279

On November 25, Mr. H. S. Cox and I had a meeting with the following City of Brookings officials regarding Mr. Jefferies' complaints at the corner of Fern Avenue and Chetco Avenue.

Al Henderson, City Administrator
Edward Riley, City Engineer
Elmer Lee, Street Superintendent
Harold Young, City Mayor
Three Council Members

Prior to our formal meeting, Mr. Cox and I looked over the four items that were listed in the complaint. We generally agreed that the engineer and his inspector had done an outstanding job in order to match all of the physical characteristics around the subject property (Shell Service Station). The only item which we felt might have been done a little differently was the grade on the sidewalk near the upper end of the lube room. It appeared to us on this first inspection that water would not run into the lube room as indicated in the complaint.

During the meeting with the city officials, Mr. Cox and I explained the reasons for constructing the approach the way it is and the curb at the upper end of the service station. I suggested that we actually go over the problems on the ground with some of the city officials and Mr. Jefferies.

Mr. Cox explained that since this was a city project and that all of the $25,000 allotment had been spent, any correction that was done would have to be at the city's expense.

RECEIVED
NOV 28 1969
ENGINEER
COUNTY & CITY DIVISION

The meeting was adjourned and we met at the Shell Station with Elmer Lee, Mr. Loring, council member, and Mr. Jefferies. After discussing all the problems at considerable length, Mr. Jefferies conceded that his only real remaining problem was the fact that water would run into the lube room. Mr. Jefferies did say that the water did not actually run into the lube room unless the wind was blowing very hard. The problem was further compounded by the fact that the water would pond in a low corner of the lube room. In order to help alleviate this problem, a section of sidewalk at the upper end of the lube room could be removed and replaced at a slightly different grade. This would probably hinder the appearance but help the drainage problem.

It was my feeling after the meeting that if Mr. Jefferies persists with his complaint, the City of Brookings would undertake the repair with their own crews.

John Quiner II

JOHN QUINER II
Assistant Division Engineer

JQII/cw
cc H. S. Cox
A. L. Chapman

RECEIVED
DEC 24 1969
FOR FILING

308-1707

7279

Agenda 39
II 4
11-18-69

November 26, 1969

Da-Tone Construction Company
628 Spruce
Brookings, Oregon 97415

Gentlemen:

The State Highway Commission at its meeting on November 18, 1969, considered your request for an extension of time of 17 days on Contract No. 7279 for grading and paving Fern Avenue in Brookings in Curry County.

Careful consideration was given to the reasons you submitted. However, in light of the available facts and the provisions of the contract, the Commission granted you a 16-day extension of time, which will delete all liquidated damages.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

By
C. W. Head, Assistant Secretary

sj
cc F. D. Morgan
V. E. Skoog
C. T. Keasey
A. L. Chapman

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7279 Contractor DA-TONE Construction Company

Highway City Street

Section Brookings (Fern Avenue)

Kind of Work Grading & Paving

It is recommended that the request for increase in the number of workdays within which to complete said contract be DENIED or GRANTED. The reasons for such recommendation are as follows:

The contractor was held up with his grading and surfacing operations for about three weeks by the work of the City of Brookings and the Water Company while lowering and adjusting their utilities. The Water Company laid a new 8-inch main the full length of the project and adjusted all service connections and the City lowered most of their sewer lines on this street. The contractor was able to do only limited work during this period and his request for additional calendar work days appears reasonable.

There was an extra 8 day delay in submitting the contract for signature.

Recommended for Approval:

Division Engineer

Construction Engineer or Bridge Engineer

State Highway Engineer

Contract No. 7279

Project designation State (State-Federal)

Date awarded July 24, 1969

Work started August 4, 1969

Per cent completed 100% Sept. 29, 1969 (Date)

No. of Workdays Allowed 40

No. of Workdays Used 56

No. of Added Workdays Requested 17

B—300 (Rev.)—5M—10-57

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon

Date October 1, 19 69

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 40 days to 57 days, within which to complete our Contract No. 7279, without the assessment of liquidated damages. The said contract is described as follows:

Grading & Paving Brookings (Fern Avenue) Section, City Street, Curry County.

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

August 5, 1969 through August 24, 1969 unable to perform any work due to the City of Brookings having not removed sewer line and Brookings Water Company having not removed water line. Both sewer and water lines ran the full length of this project.

Respectfully submitted,

De-Tone Construction Co.
Contractor

By Darrel Allsup Owner

CONSENT OF SURETY

Date October 2, 19 69

We, GENERAL INSURANCE COMPANY OF AMERICA

, as surety on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

Richard N. Mahle
Richard N. Mahle Attorney-in-fact

(SEAL)

No Longer Required in Oregon
Resident

OREGON STATE HIGHWAY DEPARTMENT 11/25/69 PROGRESS ESTIMA

SECTION BROOKINGS /FERN AVE /

HIGHWAY CITY STREET

TYPE WORK GRADING AND PAVING

COUNTY CURRY

SPECIFIED COMPLETION A) 40 CWD B) C)

AWARDED 07

EXTENSION 16

CONTRACTOR DATONE CONSTRUCTION BROOKINGS 97415

ITEM NO.	ITEM NAME / UNIT	UNIT PRICE	ORIGINAL AUTHORIZATION QUANTITY	ORIGINAL AUTHORIZATION AMOUNT	CORRECTED ESTIMATE QUANTITY	CORRECTED ESTIMATE AMOUNT
001	GENERAL EXCAVATION LUMP SUM	34000000	100000	340000	100000	340000
002	3/4IN-0 MATERIAL IN BASE-2INCHES THICK SQ YDS	3500	4540000	158900	5017300	175606
003	STONE BASE 11 1/2 IN THICK SQ YDS	15000	4340000	651000	5116500	767475
004	CLASS B ASPHALT CONCRETE-3 INCHES THICK SQ YDS	19500	4540000	885300	4881200	951834
005	8-INCH SEWER PIPE LIN FT	45000	180000	81000	150000	67500
006	12-INCH SEWER PIPE LIN FT	55000	600000	330000	588000	323400
007	ADJUSTING MANHOLES ONLY	1000000	3000	30000	3000	30000
008	CONCRETE INLETS TYPE B ONLY	3500000	1000	35000		
009	CONCRETE INLETS TYPE CG-1 ONLY	3500000	8000	280000	7000	245000
010	CONCRETE CURBS LIN FT	23500	1650000	387750	1384900	325452
011	CONCRETE DRIVEWAYS SQ YDS	80000	100000	80000	132570	106056

GRESS ESTIMATE AND COST REPORT

PAGE NO. 01 FORM E-498 (REV. 5-69)

AWARDED 07 24 69 F.A.P. CONTRACT NO. 7279 WORK DONE TO:

EXTENSION 16 CWD APPROVED A) 11-18-69 PREFIX 308 1707

USED B) 56 CWD ESTIMATED DATE

RUCTION C) ESTIMATE NO. 005 OF COMPLETION:

7415 POST FINAL

RECTED ESTIMATE		PERFORMED TO DATE 09/29/69		TO COMPLETE 09/29/69		GROUP P OR N	NEW TOTAL TO DATE	
NTITY	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT		QUANTITY	AMOUNT
100000	340000	100000	340000			9N		
017300	175606	5017300	175606			9N		
116500	767475	5116500	767475			9N		
881200	951834	4881200	951834			9N		
150000	67500	150000	67500			9N		
588000	323400	588000	323400			9N		
3000	30000	3000	30000			9N		
						9N		
7000	245000	7000	245000			9N		
1384900	325452	1384900	325452			9N		
132570	106056	132570	106056			9N		

OREGON STATE HIGHWAY DEPARTMENT 11/25/69 PROGRESS ESTIMA

SECTION BROOKINGS /FERN AV E/ COUNTY URRY AWARDED 0

HIGHWAY CITY STREET SPECIFIED COMPLETION A) 40 CWD B) C) EXTENSION 16

TYPE WORK GRADING AND PAVING CONTRACTOR DATONE CONSTRUCTION BROOKINGS 97415

ITEM NO.	ITEM NAME / UNIT	UNIT PRICE	ORIGINAL AUTHORIZATION QUANTITY	ORIGINAL AUTHORIZATION AMOUNT	CORRECTED ESTIMATE QUANTITY	CORRECTED ESTIMATE AMOUNT
012	CONCRETE WALKS SQ YDS	70000	290000	203000	265600	185920
	TOTALS FOR ORIG. CONTRACT			3461950		3918243
	PRICE AGREEMENTS					
30101	EXC BELOW GRADE CU YD	22500			380000	85500
	ADJUSTMENTS					
6001	LIQUIDATED DAMAGES DAY	-500000			1600	-800000
6001A	LIQU DAM TIME EXT COMM ACT 11-18-69 DAY	500000			1600	800000
	* TOTAL PAY COSTS			3461950		3603743
	ADD. ANTICIP. ITEMS					
94001	FLAGGING			10000		
98999	CONTINGENCIES			156237		

PROGRESS ESTIMATE AND COST REPORT

PAGE NO. 02 — FORM E-498 (REV. 3-69)

CWD

AWARDED 07 24 69 — F.A.P. — CONTRACT NO. 7279 — WORK DONE TO:

EXTENSION 16 CWD — APPROVED A) 11-18-69 — PREFIX 308 1707

USED B) 56 CWD — ESTIMATE NO. 005 — ESTIMATED DATE OF COMPLETION:

STRUCTION 97415 — C) POST FINAL

ORRECTED ESTIMATE		PERFORMED TO DATE 09/29/69		TO COMPLETE 09/29/69		GROUP POR N	NEW TOTAL TO DATE	
UANTITY	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT		QUANTITY	AMOUNT
265600	185920	265600	185920			9N		
	3518243		3518243					
380000	85500	380000	85500			9N		
16000	-80000	16000	-80000			9N		
16000	80000	16000	80000			9N		
	3603743		3603743					
						9N		

OREGON STATE HIGHWAY DEPARTMENT — PROGRESS ESTIMA

11/25/69

SECTION BROOKINGS /FERN AVE/ — COUNTY CURRY — AWARDED 07

HIGHWAY CITY STREET — SPECIFIED COMPLETION A) 40 CND B) C) — EXTENSION 14 6

TYPE WORK GRADING AND PAVING — CONTRACTOR DATONE CONSTRUCTION BROOKINGS 97415

ITEM NO.	ITEM NAME	UNIT	UNIT PRICE	ORIGINAL AUTHORIZATION QUANTITY	ORIGINAL AUTHORIZATION AMOUNT	CORRECTED ESTIMATE QUANTITY	CORRECTED ESTIMATE AMOUNT
99999	ENGINEERING				347195		446257
	GRAND TOTALS				3975382		4050000

RESIDENT ENGINEER ---------- DATE

DW

OGRESS ESTIMATE AND COST REPORT

PAGE NO. 03 FORM E-498 (REV 5-68)

AWARDED 07 24 69 F.A.P. CONTRACT NO. 7279 WORK DONE TO:

EXTENSION 16 CWD APPROVED 11-18-69 PREFIX 308 1707

A) 56 CWD

USED B) ESTIMATE NO. 005 ESTIMATED DATE OF COMPLETION:

C) POST FINAL

RRECTED ESTIMATE		PERFORMED TO DATE 09/29/69		TO COMPLETE 09/29/69		GROUP PORN	NEW TOTAL TO DATE	
ANTITY	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT		QUANTITY	AMOUNT
	446257		444301		1956			

FILED
NOV 12 1969
FOR FILING

308-1707
7279

November 10, 1969

Mr. Cameron C. Thom
City Attorney for Brookings
McInturff, Thom, Collver & Rossi
Post Office Box 748
Coos Bay, Oregon 97420

Dear Mr. Thom:

Reference is made to your letter of October 23 concerning the construction work recently completed on Fern Avenue in the city of Brookings, Contract No. 7279.

We are instructing our Division Engineer, C. T. Keasey, and a member of our County-City Division to meet with you at the site as soon as proper arrangements can be made. They will discuss your problem and see if there is anything further that can be done to help the situation.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: R. L. Porter
F. B. Klaboe
V. D. Wolfe 9500
F. D. Morgan
H. S. Cox) Get together and make an appointment with
C. T. Keasey) Mr. Thom and the service station owner and travel to Brookings and go over the matter with them. You might also check with Mr. Morgan who has looked at the situation and has some ideas concerning it.

FBK:srb sr

FORM E-80 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
November 3, 1969

SUBJECT: Complaint
Brookings (Fern Avenue) Section
Curry County
Contract No. 7279

To:
Mr. F. B. Klaboe
Assistant State Highway Engineer
BUILDING

Herewith copies of correspondence regarding subject complaint received from Mr. Don Jefferies, Prop., Brookings Shell Station.

I recommend that the City of Brookings be contacted by a representative of Division III and by a member of our County City Division to work out a solution of Item No. 2 of this complaint. Solution to the problem should be accepted by the City of Brookings as satisfying this complaint.

F. D. Morgan
Construction Engineer

FDM:fw

Attach.

cc C. T. Keasey

B/up 11-7

RECEIVED
NOV 3 1969
OFFICE OF
STATE HIGHWAY ENGINEER

FORM B-30 (12-67)

Routing: Morgan, Decker, Bond, Walker, Doehne, Johnson, Peese, Swan, Glenn, Litchfield, Gallagher, Stein

RECEIVED
NOV 3 1969
CONSTRUCTION DIVISION

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Roseburg, Oregon
October 31, 1969

SUBJECT: Assignment 802-M
Complaint
Brookings-Fern Avenue
Contract No. 7279

To: Mr. F. D. Morgan
Construction Engineer
S A L E M

As requested, on October 30 Mr. Don Jeffries was contacted by A. L. Chapman, Resident, to determine the extent of his complaint regarding our recently completed project in Brookings. Mr. Chapman's report of his meeting with Mr. Jeffries is enclosed.

I believe that the only point in the complaint that could be the fault of our construction is No. 2. There is apparently enough grade change between the driveway approach and the service station proper that it makes it difficult to push cars into the station. This condition probably could have been corrected during construction by lowering the back of the driveway.

Items No. 1 and 4 are construction items which were necessary in order to properly construct the curbs and sidewalks. These two items have tended to cramp the station which is already built in too small an area. I do not feel that these items should be changed.

As for Item No. 3, I personally observed the drainage on this street during the storm that deposited approximately 3½" of rain in a few hours. At this time there was no water running into the station. The only water that gets into the station is that which is blown in by a strong wind.

It is recommended that if the City of Brookings desires, we could write a State Force Order for correcting the driveway slope. The City of Brookings should be advised, however, that since this project was over the $25,000 city allotment figure, all of the expense in correcting this driveway would be theirs.

John Quiner II

JOHN QUINER II
Assistant Division Engineer

JQII/cw

FORM S-30 REV 8-68 SP*8470-734

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Grants Pass, Oregon
October 31, 1969

SUBJECT: Complaint
Brookings (Fern Avenue)
Contract No. 7279

To:

Mr. C. T. Keasey
Division Engineer
Roseburg, Oregon

Attention: Mr. John Quiner II

Contacted Mr. Jeffries in Brookings about his complaint as per your instructions. He explained his objections to the sloping of the curbs, sidewalks and driveways along Fern Avenue and by his Shell Service Station.

Following is a brief comment on the items in Mr. Jeffries complaint:

1. - The original approach occupied about three feet of the sidewalk along Chetco Avenue and in front of the service station. The curb for the new approach was laid to protect the sidewalk area. As the station is cramped for room along Chetco Avenue the patrons sometimes run over the sidewalk and the end of the new curb which could cause tire damage.

2. - Grade of this driveway was sloped from the curb line to the back of the sidewalk then flattened to match the apron of the station. Slopes and grades as per plans and drawing No. 2077

3. - Same conditions as No. 2. Water from the street, sidewalk or driveway cannot flow into station. Some water from the area between the back of widewalk and station building could possibly seep into one door of lube room.

4. - The "foot hazard" he speaks of is a hump in the sidewalk caused by sloping the five foot sidewalk 0.02 per foot towards the curb and the balance sloping down to meet the grade at the back of the service station.

On September 30th, 1969, I talked with Mr. Young, Mayor of Brookings and two City Councilmen about acceptance of this project. The matter of Mr. Jeffries complaint was discussed. The complaint has broadened some in scope since then but is essentially the same. The letter of acceptance from the City of Brookings was dated October 1st, the day after our meeting.

A. L. Chapman
Resident Engineer

McINTURFF, THOM, COLLVER & ROSSI

ATTORNEYS AT LAW

WILLARD W. McINTURFF
CAMERON C. THOM
WILLIAM M. COLLVER
GARY D. ROSSI

590 COMMERCIAL
COOS BAY, OREGON 97420
TELEPHONE 267-3169

MAIL ADDRESS: P. O. BOX 749

IN REPLY REFER TO FILE NO.

October 23, 1969

REFERRED TO
Admin
BY SECRETARY

REFERRED TO
Morgan
BY DEPUTY STATE HIGHWAY ENGINEER

DRAFT PLEASE
RLP

3500

Oregon State Highway Department
Highway Building
Salem, Oregon 97310

Re: Brookings (Fern Avenue)
Contract 7279

Gentlemen:

It is apparent that certain construction problems have arisen concerning the finishing of the above contract. It is my understanding that at the time of completing the construction in the area of the Brookings Shell Service Station, the inspector, although being told of the problems which were being created, still insisted on completion according to his own theories and interpretation of the design. The engineer in charge of the project was not present at the time the work was done or problems pointed out to the inspector.

Mr. Jeffries, proprietor of the station, has set forth the problems which he is now experiencing and we would request that the state consider at this time providing for a remedy to the problems. We have enclosed Mr. Jeffries' outline of the problems. I would appreciate hearing from you in the near future concerning the intentions of the State Highway Department relative to this matter.

Yours very truly,

Cameron C. Thom

Cameron C. Thom
City Attorney for Brookings

CCT:lp
Enclosure

Routing
Morgan
Decker
Bond
Walker
Johnson
Peete
Swan
Glenn
Litchfield
Gallagher
Stein

RECEIVED
OCT 27 1969
CONSTRUCTION
Division

RECEIVED
OCT 24 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
OCT 24 1969
OREGON
STATE HIGHWAY COMMISSION

BROOKINGS SHELL SERVICE
DON JEFFERIES, Prop.
600 CHETCO AVENUE
BROOKINGS, OREGON 97415

THESE ARE THE ITEMS IN COMPLAINT:

1. On the corner of fern and Chetco, the driveway was shortened approximately three (3) feet; thereby causing incoming and departing autos to bend wheels also causing split rims unnecessarily.
2. Double break in island approach causing inabiliby to push cars into the station.
3. An excessive crown on the approach into the lube bay causing water to enter the station.
4. There is a foot hazard on the corner of Fern Avenue and Chetco #2.

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OCT 24 1969
OREGON
STATE HIGHWAY COMMISSION

RECEIVED
NOV 7 - 1969
FOR Files

308-1707
7279

November 7, 1969

Oregon State Highway Commission

Gentlemen:

Work was completed September 29, 1969, on Contract No. 7279. The contract was with Da-Tone Construction Company and was for grading and paving on the Brookings (Farm Avenue) Section in Curry County.

As the contractor has completed all work according to specifications, I recommend that you accept the project effective November 7, 1969, and that you concur in this procedure at the Commission meeting on November 18.

It is assumed that if you have no objections to this action and you do not advise me to the contrary, I may consider the matter has your approval.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Query
R. L. Porter
F. B. Klaboe
V. D. Wolfe
V. E. Skoog
F. D. Morgan
L. H. Young
C. T. Keasey

srb sr

RECEIVED
NOV 10 1969
FOR FILE

308-1707
7279

November 7, 1969

General Insurance Company
of America
Portland Service Office
520 S. W. 6th
Portland, Oregon 97204

Gentlemen:

Contract No. 7279 awarded to De-Tone Construction Company for grading and paving Fern Avenue in the city of Brookings in Curry County was completed on September 29, 1969, and accepted by the Highway Commission on November 7, 1969.

Final payment in the amount of $1,727.53 will be released to the contractor after November 14, 1969. The total contract amount is $35,237.43 and no work was performed under force account.

No claims for labor or material have been filed with us.

Very truly yours,

Floyd Quarry, Secretary
OREGON STATE HIGHWAY COMMISSION

By
C. W. Hurd, Assistant Secretary

fhm

cc De-Tone Construction Co.
628 Spruce
Brookings, Oregon 97415

Frank Morgan
Ivan Merchant
V. E. Skoog
Attn: John Kerr
C. T. Keaney

RECEIVED
OCT 21 1969
FOR FILING

308-1707
7279

October 20, 1969

Oregon State Highway Commission

Gentlemen:

Request for Extension of Time
No. 4
November 18, 1969 meeting

De-Tone Construction Company, contractor on the Brookings (Fern Avenue) city street project in Curry County, Contract No. 7279, requests a 17-day time extension because of delay in relocating utilities in the project area. Extensive relocation of sewer and water lines was required on this project. Although the contractor was able to perform some of the work items, the overall progress was delayed during its early stages until the lines were completely out of the way.

There was also a delay in submitting the contract to the contractor for execution. This was because of a delay in receiving the required deposit from the City for its share of the project funding. This justifies an eight-day time extension.

The project was completed September 29 with 16 days liquidated damages accrued in the amount of $800. I recommend a 16-day extension of time because of the delays in submitting the contract and in utility relocations, which will delete all liquidated damages. This is a Special City Allotment Project.

This matter will be on the agenda for your consideration at the November 18 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Query
R. L. Porter
F. B. Klaboe
V. D. Wolfe
V. K. Skoog
H. S. Cox
F. D. Morgan
C. T. Keasey

JAB:fw sr

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7279 Contractor DA-TOM Construction Company

Highway City Street

Section Brookings (Fern Avenue)

Kind of Work Grading & Paving

It is recommended that the request for increase in the number of workdays within which to complete said contract be [redacted] GRANTED. The reasons for such recommendation are as follows:

The contractor was held up with his grading and surfacing operations for about three weeks by the work of the City of Brookings and the Water Company while lowering and adjusting their utilities. The Water Company laid a new 8-inch main the full length of the project and adjusted all service connections and the City lowered most of their power lines on this street. The contractor was able to do only limited work during this period and his request for additional calendar work days appears reasonable.

There was an extra 2 day delay in submitting the contract for signature.

Recommended for Approval:

John Rummer
Asst. Division Engineer

Construction Engineer or Bridge Engineer

[redacted] State Highway Engineer

Contract No.	7279
Project designation	State / State-Federal
Date awarded	July 24, 1969
Work started	August 4, 1969
Per cent completed	100% Sept. 29, 1969 (Date)
No. of Workdays Allowed	40
No. of Workdays Used	56
No. of Added Workdays Requested	17

E—820 (Rev.)—SM—10-67

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon

Date October 1, 19 69

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 40 days to 57 days, within which to complete our Contract No. 7179, without the assessment of liquidated damages. The said contract is described as follows:

Grading & Paving Brookings (Fern Avenue) Section, Elk Street, Curry County.

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

August 7, 1969 through August 22, 1969 unable to perform any work due to the City of Brookings having not removed sewer line and Brookings Water Company having not removed water line. Both sewer and water lines ran the full length of this project.

Respectfully submitted,

De-Tone Construction Co.
Contractor

By Donald A. Abbott Owner

CONSENT OF SURETY

Date October 2, 19 69

We, GENERAL INSURANCE COMPANY OF AMERICA

, as

surety on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

Richard N. Mahle
Attorney-in-fact

(SEAL)

No longer required in Oregon
Resident Agent

SCA

FORM S-30 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

October 15, 1969

To:

Mr. F. B. Klaboe
Assistant State Highway Engineer
BUILDING

SUBJECT: Request for Extension of Time
Brookings (Fern Avenue) Section
Contract No. 7279

Da-Tone Construction Company requests a 17 day time extension because of utility delays. Bids were opened on this project June 26, 1969 and the workday count started August 5. Forty (40) calendar workdays were allowed.

The City sewer line and a Brookings Water Company water line both required extensive relocation through much of the length of the project. These lines were shown on the plans and a plan note points out that utilities are to be adjusted by others. This was a Special City Allotment project and it was the City's obligation to arrange for the relocations.

These relocations were not completely out of the contractor's way until August 24 or 19 days after the day count started. However, during this time, the contractor was able to do some work.

Considering the comparatively short time allowed for performance of the contract, we believe the utility work was a delaying factor and a valid reason for time extension. The project was completed September 29 with 56 calendar workdays elapsed or 16 days of liquidated damages which, at the specified $50 per day, amounts to $800.

We also find there was a delay in sending the contract to the contractor for this project. The City did not deposit their share of the funds until July 24 and the contract was mailed out the same date, but this was 8 days beyond the 20 days allowed, so an 8-day extension for this reason would also be justified.

We recommend a 16-day extension which will delete all liquidated damages. A rough draft letter to the Highway Commission is attached.

RECEIVED
OCT 16 1969
ENGINEER
COUNTY & CITY DIVISION

Noted
Oscar H. Norberg

See next page
NOTED
DON HARWELL

The contractor has made a substantial claim for idle equipment and extra overhead because of the utility delays. We are denying the claim, but believe it is proper and in complete accordance with the specifications to grant this additional time. I have discussed with the Utilities Liaison Engineer the problem which has arisen twice recently of delay in relocating utilities on these City Allotment projects. It appears that some City authorities might not be pushing the utilities enough. The short contract times we are allowing demands prompt action by utilities. If by some unforeseen circumstance we would incur a claim liability because of this, it would presumably have to be paid by the City, so it behooves them to do everything reasonable to expedite the contract performance.

(X) FBK says stress to all Gl'ties this is their sole obligation no State involvement, if we have to we will everest in agreement & hold to it on scheduling

F. D. Morgan
ConstructionEngineer

By John A. Bond

John A. Bond
Construction Administration Engineer

JAB:fw

Attach.

cc V. L. Gallagher

RECEIVED
OCT 15 1969
OFFICE OF
STATE HIGHWAY ENGINEER

SCA

OREGON STATE
HIGHWAY DEPARTMENT

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

October 13, 1969

Mr. Elmer Bankus
Brookings Water Company
Brookings, Oregon 97415

Exon
#1,400+ ?

Re: Brookings (Fern Avenue)
Contract 7279

Dear Sir:

We are in receipt of your bill dated October 1, 1969 for waterline adjustment on the Fern Avenue project.

On January 23, 1969 the State and City of Brookings entered into a formal agreement designating the several responsibilities of each party. On page 2, paragraph 3 of this agreement, the City was to have all utilities moved at no cost to the State.

Therefore, any claim for moving costs should be submitted to the City of Brookings. We are herewith returning your invoice.

Very truly yours,

V. E. Skoog

V. E. Skoog
Controller

VES:JJ:ms

cc: Mr. Elmer Lee (Brookings)
U.S. Corps

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OCT 14 1969
ENGINEER
COUNTY & CITY DIVISION

NOTED
DON HARWELL

BROOKINGS Water COMPANY

Brookings, Oregon

Oct. 1, 1969

Oregon State Highway Dept.

and / or

City of Brookings

Relocating Fern St. water line at your request:

Labor	Aug. 4	Behee 5 hr. @ 3.25	16.25
		Lightle 61/2 hr @ 3.25	21.13
		Thomas 91/2 hr @ 4/25	40.38
		Page 9 hr. @ 3.25	29.25
Backhoe	Aug. 4	1 hr. @12.50	12.50
Labor	Aug. 5	Page 4hr. @ 3.25	13.00
		Behee 3hr. @ 3.25	9.75
		Thomas 1 1/2 hr. @ 4.25	6.38
	Aug. 6	Behee 2 hr. @ 3.25	6.50
		Thomas 1 hr. @ 4.25	4.25
		Pyne 4 hr. @ 3.25	13.00
	Aug. 7	Pyne 3 1/2 hr. @ 3.25	11.38
		Page 3 1/2 hr/ @ 3.25	11.38
		Behee 8 hr. @ 3.25	26.00
		Lightle 7 hr. @ 3.25	22.75
	Aug. 8	Lightle 11 hr. @ 3.25	35.75
		Thomas 6 hr. @ 4.25	25.50
		Page 10 1/2 hr. @ 3.25	34.13
		Behee 8 1/2 hr. @ 325	27.63
		Pyne 11 hr .@ 3.25	35.75
	Aug. 9	Pyne 10 hr. @ 3.25	32.50
		Page 8 1/2 hr. @ 3.25	27.63
		Lightle 7 1/2 hr. @ 3.25	24.38
		Behee 8 1/2 hr. @ 3.25	26.00 8 hrs ?
		Thomas 10 hr. @ 4.25	42.50
Backhoe	Aug. 9	2 hr. @ 12.50	25.00
Backhoe	Aug.10	4 1/2hr. @ 12.50	56.25
Labor	Aug.10	Page 6hr. @ 3.25	19.50
		Thomas 4 1/2 hr. @ 4.25	19.13
		Pyne 7 hr. @ 3.25	22.75
		Lightle 8hr. @ 3.25	26.00
		Behee 6hr. @ 3.25	19.50
Labor	Aug.11	Pyne 5hr. @ 3.25	16.25
		Behee 8 hr. @ 3.25	26.00
		Thomas 3 hr. @ 4.25	12.75
Backhoe	Aug.11	4 1/2 hr. @ 12.50	56.25

BROOKINGS Water COMPANY

Brookings, Oregon

Labor	Aug. 12	Lightle 8 1/2 hr. @ 3.25	27.63
		Behee 9 hr. @ 3.25	29.25
		Pyne 10 1/2 hr. @ 3.25	34.13
		Thomas 6 hr. @ 4.25	25.50
Backhoe	Aug. 12	1 hr. @ 12.50	12.50
Air comp. & jack-			
	Aug. 12	3 hr. @ 12.50	37.50
Labor	Aug. 13	Thomas 3 hr. @ 4.25	12.75
		Pyne 10 1/2 hr. @ 3.25	34.13
		Lightle 10 hr. @ 3.25	32.50
		Behee 7 1/2 hr. @ 3/25	24.38
Labor	Aug. 14	Thomas 6 hr. @ 4.25	25.50
		Pyne 10 hr. @ 3.25	32.50
		Lightle 8 hr. @ 3.25	26/00
		Behee 7 1/2 hr. @ 3.25	24.38
Backhoe	Aug. 14	2 hr. @ 12. 50	25.00
Labor	Aug. 15	Thomas 3 hr. @ 4.25	12.75
		Pyne 7 hr. @ 3.25	22.75
		Lightle 4 hr. @ 3.25	13.00
		Behee 7 1/2 hr. @ 3/25	24/38
Backhoe	Aug. 15	1 hr. @ 12.50	12.50
Labor	Aug. 16	Thomas 7 1/2 hr. @ 4.25	31.88
		Pyne 7 1/2 hr. @ 3.25	24.38
		Behee 5 hr. @ 3.25	16.25
Labor	Aug. 18	Behee 2 1/2 hr. @ 3.25	8.13
		Pyne 4 hr. @ 3.25	13.00
		Thomas 4 1/2 hr. @ 4.25	19.13
Backhoe	Aug. 18	4 1/2 hr. @ 12.50	56.25
Labor	Aug. 19	Lightle 6 hr. @ 3.25	19.50
		Thomas 8 hr. @ 4.25	34.00
		Pyne 5 1/2 hr. @ 3.25	17.88
		Behee 5 1/2 hr. @ 3.25	17.88
Backhoe	Aug. 19	Backhoe 5 1/2 hr. @ 12.50	68.75
Backhoe	Aug. 20	4 1/2 hr. @ 12. 50	56.25
Labor	Aug. 20	Lightle 3 1/2 hr. @ 3.25	11.38
		Behee 6 hr. @ 3.25	19.50
		Thomas 4 hr. @ 4.25	17.00
		Pyne 10 hr. @ 3.25	32.50
Labor	Aug. 21	Lightle 3hr. @ 3.25	9.75
		Behee 3 1/2 hr. @ 3.25	11.38
		Pyne 3 hr. @ 3.25	9.75
Backhoe	Aug. 21	2 1/2 hr. @ 12. 50	31.25
Labor	Aug. 22	Thomas 10 hr. @ 4.25	42.50
		Lightle 8 1/2 hr. @ 3.25	27.63
		Pyne 7 1/2 hr.@3.25	24.38
Labor	Aug. 23	Lightle 8 hr. @ 3.25	26.00
		Behee 8 hr. @ 3.25	26.00
		Thomas 7 hr.@4.25	29.75
Backhoe	Aug. 23	2 hr. @ 12. 50	25.00
Backhoe	Aug. 24	6 1/2 hr. @ 12. 50	81.25

BROOKINGS Water COMPANY

Brookings, Oregon

Labor	Aug. 24	Lightle 12 hr. @ 3.25	39.00	
		Pyne 15.1/2 hr. @ 3.25	50.38	
		Thomas 12 1/2 hr. @ 4.25	53.13	
		Behee 12 hr. @ 3.25	39.00	
Labor	Aug. 25	Lightle 6 1/2 hr. @ 3/25	21.13	
		Thomas 8 hr. @ 4.25	34.00	
		Behee 1 hr. @ 3.25	3.25	
		Pyne 7 hr. @ 3.25	22.75	
Backhoe	Aug. 25	4 hr. @ 12.50	50.00	
Labor	Sept. 11	Behee 4 1/2 hr. @ 3.25	14.63	
	Sept. 12	Behee 2 hr. @ 3.25	6.50	2486.15

Materials:

110'-8''cast iron pipe @ 2.50	275.00
419'-8''Transite @ 1.90	796.10
26'-6" Cast iron @ 1.90	49.40
459'-6" Transite @ 1.35	619.65
95'-4" Transite @ 1.00	95.00
1-8" Flange stub	32.00
1-8"-8"-6" Flange tee	42.00
1-8"-6" Flange reducer	30.00
1-6" Flange to mech. adpt.	26.00
2-6" Mech. spools @ 16.50	33.00
1-6" lead collar	12.50
4-6" O-Ring x Flange valve @ 68.00	272.00
85lbs. Lead @.17	14.45 1447
1-8" Cross	56.00
4-8" O-Ring valves @ 97.50	390.00
1-8"x8"x4" Tee	48.00
2-4" valve	105.00
1-4" 45degree Ringtite ell	12.50
2-4" Full circle-7 1/2" @16.50	33.00
1-8'x4" reducer	16.50
1-8" Full Circle 12"	32.00
2-45 degree ells-universal 4" @ 16.50	33.00
1-8" Saddle Clamp	8.50
2-1" Corp. cock @ 3.90	7.80
1-1" Tee	1.00
2-1" x 3/4" reducers @ .65	1.30
4-3/4" Pipe to flare ftg.@ 1.50	6.00
95' 3/4" plastic line @ .27	25.65
3-3/4" Dayton @ 2.25	6.75
1- 3/4" x 90 degree pipe to flare ftg.	1.25
1-4" full circle 12 1/2"	18.50
3-4" x 2" Brass nipples @ 1.00	3.00
1-2" Brass street ell	1.75
1-2" 90 degree Brass ell	1.75
1/2" Brass union	4.50

BROOKINGS *Water* COMPANY

Brookings, Oregon

2-2" Brass Collars @ 1.25	2.50
1-6" x 6" Mech. Tee	32.00
2-6" x 6" Mech ells 45 degree @ 24.00	48.00
2-6" Sadle clamps @ 6.50	13.00
2-1" Flare to pipe ftg. @ 1.75	3.50
1-3/4 x 2" nipple	.65
1-1" x 3/4" bell reducer	.75
1-3/4" Meter Box	6.50
1-6" x 6" x 4" Tee	26.00
1-3" Full circle clamp	16.50
1-6" x 6" x 2" Mech Tee Tapt	22.00
3- 2x6 pip Nipples @ .90	2.70
1-2" Stpp cock	6.50
2-2" Collars @ 1.00	2.00
1-2" Dayton	6.50
2-2" Copper pipe @ 1.42	2.84
1-8"x8"x8" Tee	42.00
1-8"x6" Fing Tete reducer	32.00
1-8" Mech. plug	12.50
1-3/4" Corp cock	3.90
	3393.19
For back filling ditches:	
424 yd. river run @ 1.75	742.00
265 yd. screened sand @ 2.95	781.75
	1523.75
TOTAL:	7403.09

pmts check OK

SCA "N

CITY OF BROOKINGS

The Home of Winter Flowers

Phone (503) 469-2163

898 Elk Drive
P. O. Box 'C'
Brookings, Oregon 97415

October 1, 1969

A. L. Chapman, State District Engineer
Oregon State Highway Department
P. O. Box 306
Grants Pass, Oregon 97526

Dear Sir:

With this letter we accept the Fern Street Project running from Highway 101 to Pacific Avenue within the City of Brookings.

This is certainly an improvement to the City of Brookings and we hope to be able to join in another cooperative effort of this nature in the near future.

Very truly yours,

CITY OF BROOKINGS

Harold R. Young, Mayor

MBM:cc

cor

RECEIVED
OCT 17 1969
ENGINEER
COUNTY & CITY DIVISION

K OCT - 3 1969

NOTED
DON HARWELL

308-1707 7279

FORM E-1 (REV. 12-66)

OREGON STATE HIGHWAY DEPARTMENT

FIELD ENGINEER'S WEEKLY REPORT

FOR CONSTRUCTION PROJECTS ONLY
CONSTRUCTION AND BRIDGE DIVISIONS

SECTION: Brookings (Fern Avenue)		WEEK ENDING: October 18th, 1969
		SECTION PREFIX: 308-1707
HIGHWAY: City Street		COUNTY: Curry
NAME OF JOB: Brookings (Fern Avenue)	KIND OF WORK: Grading & Paving	
CONTRACTOR: DA-TONE Construction Company	CONTRACT NUMBER: 7279	FEDERAL AID PROJECT NUMBER: State
DATE OF CONTRACT: 7-24-69	DATE WORK STARTED: 8-4-69	ESTIMATED COMPLETION DATE:
AVERAGE FORCE ON PROJECT FOR THE WEEK: MEN: SUPERVISION:	SPECIFIED WORK DAYS	WORK DAYS USED
	SPECIFIED CALENDAR DAYS 40	CALENDAR DAYS USED 56
	SPECIFIED COMPLETION DATE	PERCENT OF TIME ELAPSED 140
PROJECT AUTHORIZATION: $ 39,753.62		PERCENT OF CONTRACT COMPLETED BASED ON ESTIMATED COST 100
EXCLUSIVE OF ENGINEERING: $ 36,281.87	ENGINEERING AUTHORIZATION $ 3,471.95	
ESTIMATED COST OF COMPLETED PROJECT, EXCLUSIVE OF ENGINEERING: $ 36,040.88	ENGINEERING COST TO DATE $ 3,800.00	PERCENT OF CONTRACT COMPLETED BASED ON TOTAL AUTHORIZATION 100
ESTIMATED PERCENT: OVERRUN / UNDERRUN ____ %	PERCENT OF AUTHORIZATION 109 %	DATE PROJECT WAS COMPLETED: September 29th, 1969

Semi-Final Estimate Submitted 10-14-69

ESTIMATED PERCENT COMPLETE (ROADWORK)

CLEARING	DRAINAGE	GRADING	BASE	OIL AND/OR PAVE.	MAT'L. PROD.		
100	100	100	100	100			

	GRADING	SURFACING	MAINTENANCE MATERIALS	OIL & BITUMINOUS MACADAM	PAVING
MILES IN PROJECT	0.14	0.14			0.14
MILES PARTIALLY COMPLETED					
MILES COMPLETED	0.14	0.14			0.14
TOTAL ESTIMATED QUANTITIES (CONTRACT)	100%	4,540 Sq.Yd.			4,540 Sq.Yd.
TOTAL QUANTITIES CORRECTED TO DATE	100%	5,116 " "			4,883 " "
ESTIMATED QUANTITIES MOVED OR PLACED TO DATE	100%	5,116 " "			4,883 " "
AVERAGE DAILY QUANTITIES					
AVERAGE DAILY QUANTITIES NECESSARY TO COMPLETE PROJECT ON TIME					
NUMBER OF SHIFTS PER DAY					
HOURS PER SHIFT					

EQUIPMENT USED DURING THE WEEK:

ESTIMATED PERCENT COMPLETE (STRUCTURES)

BRIDGE NO.								
PERCENT								

	WEATHER	WORK DAYS CHARGED	HOURS DELAY	CAUSE OF DELAY
SUNDAY				
MONDAY				
TUESDAY				
WEDNESDAY				
THURSDAY				
FRIDAY				
SATURDAY				

Routing

Ivy — Rowe

Decker — Swan

Bond — Glenn

Walker — Litchfield

Boehme — Gallagher

Johnsen — Stein

RECEIVED
OCT 20 1969
CONSTRUCTION DIVISION

NOTED
R. D. CHURCH

GENERAL DESCRIPTION OF ACTIVITIES FOR THE WEEK

SUNDAY	
MONDAY	
TUESDAY	
WEDNESDAY	
THURSDAY	
FRIDAY	
SATURDAY	

REMARKS

Semi-Final Estimate completed and submitted to the Division Office.

Final Report.

SIGNED W. L. Chapman LOCATION Grants Pass, Oregon

PRIME RESIDENT SUBMIT 2 COPIES. WHEN BRIDGES AND GRADING BOTH ARE INVOLVED, SUBMIT 3 COPIES.

SP*F216

SCA
Brookings

OREGON STATE HIGHWAY DEPARTMENT
PROJECT INSPECTION AND DIVISION INSPECTION REPORT

10-8-69

Project Name Brookings (Fern Avenue) Contract No. 7279

Highway City Street Prefix No. 308-1707

County Curry F. A. No. State

Final inspection made on 10-8-69 (date) by John Quiner II and W. E. Schwartz

in company with

CHECK LIST

Date		Date	
9-30-69	Construction signs removed.	N/A	Opened to traffic.
N/A	Salem Office notified to rescind construction speed zone.	With S.F. Est.	Division materials certification submitted.
9-30-69	Contractor removed equipment from project.		
9-30-69	Roadside cleanup completed.		

REMARKS: (Appearance and riding quality of job, general quality of workmanship, etc.)

The general overall appearance of this project is very good. The street drainage was observed during a heavy rainstorm and was functioning very well. The grade of the new street fits the surrounding streets and driveways very well.

All contract work on this project has been completed and recommendation is made for acceptance on 10-8-69 (date). The semi-final estimate will be submitted about 10-15-69 (date).

cc: Office Engineer
Construction Engineer
Division Engineer
Maintenance Engineer
Resident Engineer
District Maintenance Supt.
Traffic Engineer
County & City

NOTED
MAINOR C. HOLMES

RECEIVED
OCT 13 1969
ENGINEER
COUNTY & CITY DIVISION

NOTED
HAROLD REYNOLDSON

NOTED
R. H. PRANGE

NOTED
RICHARD UNREIN

John Quiner II
(signed)

Asst. Div. Engr.
(title)

Noted
Oscar H. Norberg

NOTED
P. B. Arensmeier

NOTED
DON HARWELL

SCA
Brookings

LAW OFFICE OF
FREDERIC H. STARKWEATHER, JR.
BOX 708
GOLD BEACH, OREGON 97444

August 6, 1969

Oscar

Mr. Cameron C. Thom
McInturff, Thom, Colver & Rossi
P.O. Box 748
Coos Bay, Oregon

Re: Fern Avenue
Your letter: 7-30-69

Dear Cameron:

I have before me your letter of July 30, 1969, addressed to Brookings Water Company. Unfortunately this letter was not received by Mr. Bankus until a day ago since there was postage due. In the past Mr. Bankus has had so much mail arrive this way that he had previously instructed the post office that he would not accept any mail with postage due. I don't say this as a criticism (I have inadvertently sent quite a few letters with insufficient postage and probably will many more) but merely to explain why we have not answered sooner.

This letter was the first official notice of any kind that Mr. Bankus has had on this matter. He will, of course, take the necessary steps to protect his customers service. Any actions he may take, however, are not to be construed as agreeing to do this at his own expense or as waiving any rights to compensation by the city, and this letter is notice to the city that he will demand just compensation for his expenses.

This water line was originally established by a predecessor in interest to Mr. Bankus at a time when the street was the private property of the owner of the water company. Since that time the line has been operated and maintained continuously. Mr. Bankus has been the owner since 1937 and has subsequently replaced this line within about the last fifteen years.

As you know Mr. Bankus has no written or formal franchise which spells out the respective rights and duties given and accepted by agreement. His franchise is an implied one by virtue of having been billed for and having paid a franchise tax for many years. In many cases a water company in return for certain protections in a

franchise will agree to relocate their lines at their own cost where necessary. In this case the lines existed before Fern Street was public and before the city was incorporated. It is our position therefore that the city is liable for the cost of this relocating.

Not true?

It may be true as you say that there are no provisions by the city for reimbursement. It is also true that Mr. Bankus has no provisions for such expenditures. I would call attention to paragraph 3 of "Things to Be Done and Obligations Assumed by City" in its agreement with the State. I rather doubt that the city's obligation to relocate and reconstruct this water line can be discharged merely by telling Mr. Bankus that he must do so at his expense.

I hope that this matter can be worked out amicably and satisfactorily to both sides. Perhaps you could talk this over with the counsel and then we could get together on it.

Very truly yours,

/s/ Frederic H. Starkweather, Jr.

Frederic H. Starkweather, Jr.

FHS/jy
Photocopies to: Alan H. Johansen
Oscar H. Norberg
Harold Young
David Dorn
Brookings Water Company

H.S. Cox SCA
Brookings

FORM S-58 (10-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Roseburg, Oregon
August 7, 1969

To: MEMO TO THE FILES

SUBJECT: Brookings (Fern Ave.) Sect.
Curry County

On Monday, August 4, 1969, I received a call from Marjorie McKernum, City Recorder, requesting that I come to Brookings and meet with Elmer Lee, Street Superintendent, and advise him on procedures which he might take to hasten the adjustment of Brookings Water Co. mains which conflict with construction of the subject project.

Prior to going to Brookings, I discussed the Water Co. status with John Quiner, Don Harwell, and Phil Preston. All concurred that the status of the Company was somewhat vague.

I met with both Mrs. McKernum and Mr. Lee at the City Hall at 1:00 P.M. Tuesday, August 6, and discussed past history of the City.

After this discussion we spent some two and a half hours going through the City's records. As we did so I found numerous deeds to the City from Elmer Bankus, owner of the Water Co., for parcels of land for use as city streets. These deeds appear to date from 1955 and the early parcels were sold to the City for one dollar and other valuable considerations. The later parcels were for ten dollars and other valuable considerations. One consideration included in all the deeds which I observed was for a perpetual easement for water facilities

I made a specific point of showing this to Mrs. McKernum and Mr. Lee and advised them that in these specific locations Mr. Bankus would undoubtedly be entitled to reimbursement for adjustment of his facilities which conflict with street construction or maintenance.

RECEIVED
AUG 8 - 1969
ENGINEER
COUNTY & CITY DIVISION

NOTED
RICHARD UNREIN

NOTED
DON HARWELL

August 7, 1969

After reviewing the records the situation appeared to line up as follows:

Fern Street is included in Plat I of the City of Brookings which was filed in the Curry County Court House in 1921.

Elmer Bankus began operations of the Brookings Water Co. around 1935.

The City of Brookings was incorporated in 1951.

In 1954 the City petitioned the County for and received jurisdiction over all public roads within the incorporated limits of the City, save one. The one exception was the Azalea State Park Road.

One point I wish to make here is that Chetco Avenue, or Roosevelt Highway on some maps, was included in Plat I of the City. As the Oregon Coast Highway was routed over this area prior to the City's petition, it may well be that the State's rights extend over the entire right of way and are not restricted to the roadbed surface.

After going through the City's files, I explained to Mr. Lee that it appeared the City does have a prior right to all the streets within Plat I, and that Mr. Bankus should be advised that he will have to adjust his facilities at his expense.

August 7, 1969

We then called Mr. Cameron Thom of McInturff, Thom, Collver, and Ross, who is the City Attorney, and discussed the situation with him. He advised Mr. Lee on how to approach Mr. Bankus and told him that if Mr. Bankus still refused to adjust the facilities, he (Mr. Lee) should hire the work done and the City then would take legal action to recover damages.

Mr. Lee and I then met with the State's contractors, Daryl Allsup, and E. L. Bennett of the Da-Tone Construction Company, and William Smalley, the inspector, and discussed events with them. At this time the contractor was well along into his excavation work. He stated that he would assist Bankus in every way he could but he needed the water facilities moved just as soon as possible.

Mr. Lee said he would contact Bankus the first thing in the morning.

Tuesday evening I met with John Quiner and discussed the situation with him.

Wednesday morning Mr. Lee was unable to contact Mr. Bankus prior to his coming onto the project and after introductions he immediately began negotiations with Mr. Allsup for trenching to lower the mains. Mr. Allsup said he would have the trenching completed that day and Mr. Bankus said he would lower the mains on Thursday, August 7.

JOHN E. HOLCOMB
Field Utilities Liaison Engineer

JEH:ejb
cc: C. T. Keasey
H. S. Cox
T. W. Litchfield
A. L. Chapman
R. L. Sandmann

RECEIVED
AUG 6 - 1969
FOR FILE

308-1707
7279

August 5, 1969

Du-Rhee Construction Co.
626 Cypress
Brookings, Oregon 97415

Gentlemen:

We enclose for your files a fully executed copy of the following described contract which was awarded to you by the State Highway Commission:

Contract No. 7279 for grading and paving Fern Avenue in the city of Brookings in Curry County.

A copy of this contract is also being sent to the surety on your performance bond.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

sr
Enclosure
cc: General Insurance Co. of America

D. J. Barbee
F. D. Morgan
I. D. Merchant
C. T. Kenney
A. L. Chapman

NOTED
H. S. COX

July 22, 1969

Mrs. Marjorie McKernan
City Recorder
P. O. Box C
Brookings, Oregon 97415

Dear Mrs. McKernan:

This is in regard to the adjustment of water lines on the Fern Avenue SCA Project in Brookings.

One of our staff attorneys had an inquiry from Mr. Frederic H. Starkweather, Attorney at Gold Beach, representing a private owner of a water system in Brookings, asking who was going to move the water supply facilities that will be in the way of construction. We are referring the inquiry to you for a reply to the attorney because of the City's responsibilities in this matter.

Attached hereto is a copy of our letter from the State Staff Attorney.

Very truly yours,

H. S. Cox
County and City Engineer

By
Oscar E. Norberg

Oscar E. Norberg
Field Engineer

OEN:lat

Att.

cc C. T. Keeney
Alan E. Johansen

7-24-69 8:30AM Edwards called RE: above. P.U.C. contacted him and wants city to give written notice to Bantus (owner of utility) to adjust his facilities. I call John Holcomb and he is going to Brookings to resolve this situation. JH.

NOTED
MAINOR C. HOLMES

NOTED
RICHARD UNREIN

NOTED
DON HARWELL

SCA

FORM S-30 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
July 18, 1969

To:

SUBJECT: Paving project
Fern Avenue
City of Brookings

Mr. H. F. Cox
County-City Engineer
B u i l d i n g

We recently had a telephone call from Mr. Frederic H. Starkweather, Jr., attorney of Gold Beach, relative to utility relocation in connection with the above project. It appears that Mr. Starkweather represents the owner of some private water company, which has a line requiring revision or relocation in connection with this project. Specifically, his question was who, as between the City and the State, was responsible for the cost of this work.

Under the agreement of January 23, 1969, as authorized by Resolution No. 133 of the Brookings City Council on January 21, 1969, and by the Highway Commission on December 17, 1968, it appears that any responsibility in this regard is that of the City. We refer specifically to paragraph 3 under "THINGS TO BE DONE AND OBLIGATIONS ASSUMED BY CITY" in said Agreement.

Accordingly, will you bring this inquiry to the attention of the appropriate City officers, and request them to contact Mr. Starkweather?

Alan H. Johansen

ALAN H. JOHANSEN
Staff Attorney

AHJ:rh

cc: Mr. G. E. Rohde
Mr. Glen V. Sorensen

RECEIVED
JUL 18 1969
ENGINEER
COUNTY & CITY DIVISION

NOTED
DON HARWELL

RECEIVED
SEP 26 1969
FOREIGN
308-1707
1277

July 24, 1969

Du-Rons Construction Co.
628 Spruce
Brookings, Oregon 97415

Gentlemen:

The State Highway Commission on July 3, 1969, accepted your proposal for grading and paving Fern Avenue in the city of Brookings in Curry County for the sum of $34,619.50 and referred it to the State Highway Engineer with authority to award the contract as soon as approval of the City of Brookings is received and the sum of $5,695 is deposited by the City.

These conditions were fulfilled and the State Highway Engineer today awarded you the project, which has been assigned Contract No. 7279.

Enclosed are three copies of this contract. Two of these copies should be signed on the contract and bond pages and returned to this office for completion. Please follow exactly the instructions given on the blue slip attached to the contract.

The third copy of the contract stamped "Advance Copy to be Retained by Contractor" is furnished for your information pending receipt of a fully executed copy.

The calendar working count on this contract will begin August 5, 1969.

Very truly yours,

Floyd Quarry, Secretary
OREGON STATE HIGHWAY COMMISSION

cc
Enclosures

bc: Pacific Builder & Engr., Inc., Seattle, Wash.
Daily Journal of Commerce, Seattle, Wn., & Portland, Ore.
Frank Morgan
D. J. Barbee
I. D. Merchant
William Geibel (SAIF)
C. T. Keasey
A. L. Chapman

NOTED
H. S. COX

June 26, 1969

Mrs. Marjorie McKernan
City Recorder
P. O. Box "C"
Brookings, Oregon 97415

Dear Mrs. McKernan:

On June 26, 1969, the State Highway Commission opened bids on the 1969 Special City Allotment project on Fern Avenue in Brookings. The apparent low bid was submitted by Da-Tone Construction of Brookings, Oregon.

The anticipated cost based on the bid is as follows:

Contractor's bid	$34,619.50
Anticipated additional items	100.00
Total	34,719.50
14-1/2% Engineering and contingencies	5,034.32
Total	$39,753.82
Estimated portion of preliminary engineering charged to project	941.00
TOTAL ANTICIPATED COST	$40,694.82

As the contract cannot be awarded until the City has deposited its estimated share of cost, please forward at your earliest convenience a check or warrant to this office in the amount of $15, 695.00, made payable to the Oregon State Highway Commission.

Very truly yours,

H. S. Cox
County and City Engineer

By Oscar H. Norberg
Oscar H. Norberg
Field Engineer

OHN:lat

bc: L. H. Young
C. T. Keasey

NOTED
MAINOR C. HOLMES

NOTED
RICHARD UNREIN

NOTED
P. B. Arensmeier

NOTED
DON HARWELL

Council meets Wed. July 23rd morning

7-8-69
MAYOR Young called, after reviewing bids, he sounded as though City will forward its advance deposit
KH.

NOTED
H. S. COX

May 22, 1969

Mrs. Marjorie McKernan
City Recorder
P.O. Box C
Brookings, Oregon 97415

Dear Mrs. McKernan:

The final estimate, prior to opening bids, for the 1969 Special City Allotment project on Fern Avenue is now available. It is presently estimated that this project will cost $36,750. In our letter of October 28, 1968, it was estimated that the cost would be $35,000. The City at a meeting in Brookings on January 14, 1969 requested that a concrete sidewalk be added on the westerly side of Fern Avenue which is estimated to cost $1,600.

Advertisements for bids on this project will go out June 5 with opening of bids scheduled for June 26. Please keep the estimate of cost confidential.

Very truly yours,

H. S. Cox
County and City Engineer

By
Oscar H. Norberg
Oscar H. Norberg
Field Engineer

OHN:eb

NOTED
P. B. [illegible]

Noted
Oscar H. Norberg

NOTED
RICHARD UNREIN

NOTED
DON HARWELL

Brookings (Fern Ave) Sec.
City Street

NOTED
H. S. COX

5-12-9 G.C.

General Excavation	2200 c/y.	1711 Specified	0.35	5000
3/4"-0 Maternalin Base - 2 inches Thick	285	4540 sq yd	~~1.50~~ 1.85	~~6810~~ 8029 =
Stone Base, 11/2 inches Thick	1645.	4340 sq yd	~~2.00~~	~~8501~~
Class B Asphalt Concrete - 3 inches Thick	70% Tons	4540 Sq yd	1.50	6,810 -
8-inch Sewer Pipe		460 l.n. ft	3.60 ~~3.00~~ 5.00	1656 ~~1265~~ 1500 -
12- " "		300 l.n. ft	~~4.00~~	~~1200~~ -
Adjusting Manholes.		3 only	100.-	300 -
Concrete Inlets, Type B		1 only	120.00	120 -
" " " CG-1		8 only	135.00	1080 -
" Curbs		1650 l.n. ft	1.85	3052.50
" Driveways		100 Sq yd	6.25	625 -
" Walks		290 Sq yd	5.50	1595 -
				~~29665.50~~
		Anticipated		~~300~~
				~~29965.50~~
		Engr. & Cont.	14½	~~4345.~~
				~~34310.50~~
				31 356.50
		Anticipated		100
				31 456.50
		14½ E&C.		4 561.19
				36,017.69
		Est. A.E.		734.15
				$ 36,751.84

Flagging 100 ~~300~~

RECEIVED
MAY 20 1969
ENGINEER
COUNTY & CITY DIVISION

$\frac{\$ 11,017.69}{\$ 36,017.69} \times \underset{\text{Est.}}{\$ 2,400} = \$ 734.15$

RICHARD UNREIN

Noted
Oscar H. Norberg

NOTED
DON HARWELL

NARRATIVE REPORT
Brookings (Fern Avenue)
Curry County March 1969

This survey was made to establish center line and grades and prepare plans, specifications and quantities for grading and paving of the subject project. Overall length is 730 lin. ft.

Center line for street construction was run to fit block corners established and identified by the Engineer for the City of Brookings. Grades were laid to best fit adjacent property and proposed side street construction. Plans call for a 42-foot paved street with class "C" concrete curbs, concrete driveways and a 5-foot concrete sidewalk along the westerly side of the street.

Storm sewers are planned for this project with connections to existing storm sewers on Pacific and Chetco Avenues. There will be some conflict with the city water system particularly with feeds to adjacent properties. Some of the mains will have to be lowered to allow for grading work.

There will be about 2,000 cu. yds. of excess material from grading operations. The City of Brookings will provide a place for this material along Fern Avenue and about 300 feet north of the north end of the project.

Select bar-run gravels proposed for this project are available in the Chetco River bars with haul of about one mile. Levelling material, paving aggregates and concrete aggregates are available at local commercial plants.

NOTED
RICHARD UNREIN

Form 8-68-3004

OREGON STATE HIGHWAY DEPARTMENT

TABULATION SHEET

SHEET ..... OF ..... SHEETS

Fern Avenue (Brookings)

City Street Curry County

ESTIMATE OF COST

	ITEM			Unit	Quantity	Unit Price	Amount
1.	Clearing & Grubbing			All Spec.			$ 500.00
2.	General Excavation, Unclassified			Cu. Yd.	2,440	1.50	3,660.00
3.	Trench Excavation			Cu. Yd.	210	3.50	735.00
4.	8-Inch Storm Sewer Pipe			Lin. Ft.	470	2.50	1,175.00
5.	12-inch Storm Sewer Pipe			Lin. Ft.	286	4.00	1,144.00
6.	Catch Inlets			Each	9	150.00	1,350.00
7.	Adjust Manholes			Each	3	150.00	450.00
8.	Surfacing & Paving (Complete)			Sq. Yd.	4,550	3.10	14,105.00
9.	Concrete Curbs			Cu. Yd.	49.00	60.00	2,940.00
10.	Concrete Driveways			Sq. Yd.	69.00	7.00	483.00
11.	Concrete Sidewalks			Sq. Yd.	299.00	5.00	1,495.00
					Net Total		$28,037.00
					Engineering & Contingencies 20%		5,607.40
							$33,644.40
							GAR. 34
							$ 34 286.74

SURVEY Est. $2,500 × $\frac{8,644.40}{33,644.40}$ =

OREGON STATE HIGHWAY DEPARTMENT
CONSTRUCTION DIVISION
SOILS AND GEOLOGY SECTION
PROJECT BASE DESIGN

Section FERN AVE. Highway CITY OF BROOKINGS County CURRY Prefix 308-1403

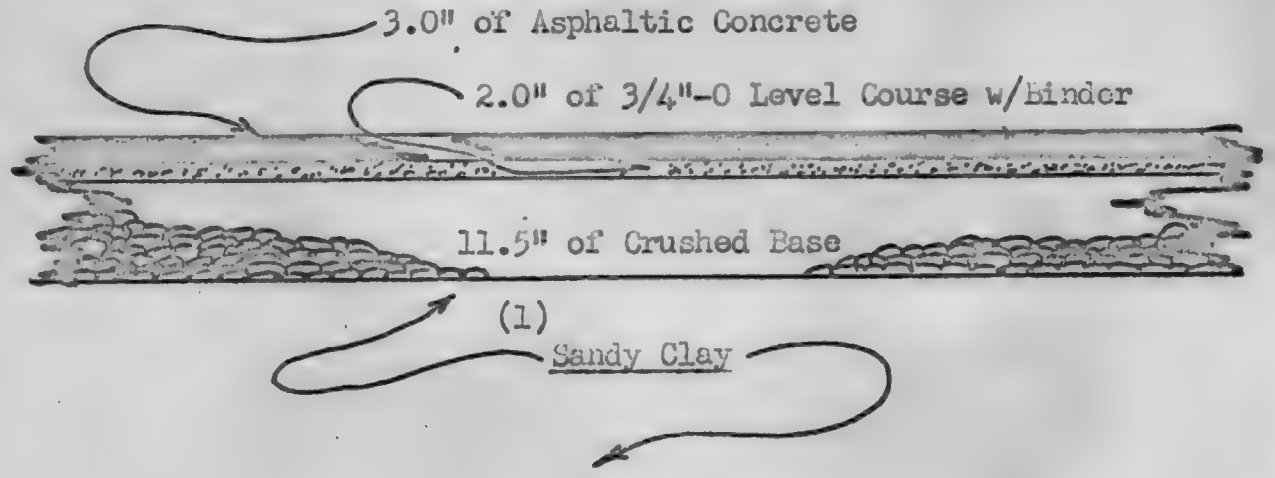
Res. Engr. A. L. Chapman Approx. Length 0.14 Miles. Sta. _____ to Sta. _____ Date 3-20-69

Lean

Truck A.D.T. 41 Traffic Coefficient 6.0 18 kip s.a. per day 5.8.

Annual Precipitation 93"± Frost Penetration - - - - -.

(1)
Typical Soil
39 LL
10 PI
99 %P 10
66 %P200
1 %Gravel
7 %C Sand
26 %F Sand
33 %Silt
33 %Clay
8 "R" Value



CBE Total Req.	Credit	Actual Thick.	
	0.0	3.0	A.C.
	2.0	2.0	Level Crse.
	11.5	11.5	Cr. Base
19.5	19.5	16.5	

AASHO CLASSIFICATION:

A-4 (0)

MATERIAL SOURCES:

To be determined by the Engineer.

See remarks on Page 2.

NOTED
F. B. KLABOE

cc:
P.R.
Asst. State Highway Engineer
Construction Engineer
Engineer of Materials
Division Engineer
Resident Engineer
Design Engineer
Specifications Engineer
Local Design Engineer
Division Geologist

308-1403
1370

Submitted by E. J. Lange
for Staff Assistant

Recommended by O. A. Kinnate
Engineer of Materials

Recommended by A. L. Chapman
Asst Construction Engineer

Approved by B. Klaboe
Asst. State Highway Engineer

SECTION: FERN AVE.

HIGHWAY: CITY OF BROOKINGS

COUNTY: CURRY

"OTHER ROADS"

Traffic Coefficient	A.C. Wearing Surface	P.M.B.B. or C.T.B.	3/4"-0 Level	Crushed Base	S.S. or L.T.S.	"CBE" Total Requirement	Actual Thickness
NONE							

Remarks:

A condition survey completed February, 1969, indicated the existing surfacing to be in very poor condition, heavily patched, alligatored, with a number of chuckholes.

No salvage is recommended.

Should substitutions be made use the "CBE" Total Requirement column to obtain the "Total Thickness Required" and the table below for values:

1.0"	Asphaltic Concrete	=	2.0"	Crushed Base
1.0"	Plant Mix Bituminous Base	=	1.8"	Crushed Base
1.0"	Cement Treated Base	=	1.8"	Crushed Base
1.0"	Oil Mat	=	1.1"	Crushed Base
1.0"	Stone Subbase (Per Standard Specifications plus Supplementals)	=	0.8"	Crushed Base
1.0"	Lime Treated Subgrade	=	---"	Crushed Base

Above factors apply to materials that comply with the Standard Specifications.

TRAFFIC ANALYSIS

SECTION: FERN AVE.

HIGHWAY: CITY OF BROOKINGS

COUNTY: CURRY

1000 Present ADT (1969)

3 Percent Trucks

AXLES	TWO WAY TRUCK ADT	EXPANSION FACTOR	TOTAL TADT	MEAN TADT	ONE WAY EWL	AVERAGE ANNUAL EWL
2	28	1.7	48	38	450	17,100
3	2	1.7	3	3	1000	3,000
4	0	---	--	--	1250	- - - -
5	0	---	--	--	3180	- - - -
6	0	---	--	--	2570	- - - -
				41	TOTAL	

TOTAL AVERAGE ANNUAL DESIGN EWL 20,100

TWENTY YEAR EWL 402,000

TRAFFIC COEFFICIENT 6.0

SECTION: FERN AVE.

HIGHWAY: CITY OF BROOKINGS

COUNTY: CURRY

PAVEMENT TYPE SELECTION

Principal Factors Governing Selection

1. Traffic Classification: See attached sheet
2. Soils Characteristics: See design chart attached
3. Weather: See design chart attached
4. Performance of Similar Pavements in Area: Good X Fair _____ Poor _____
   Remarks: _____
5. Cost Comparisons: See remarks

Secondary Factors Governing Selection

6. Adjacent Existing Pavements: A.C. or Oil
7. Stage Construction: Not applicable
8. Depressed, Surface, or Elevated Design: Surface
9. Conservation of Aggregates: See remarks
10. Stimulation of Competition: See remarks
11. Construction Consideration: See remarks
12. Municipal Preference, Participating Local Government Preference, and Recognition of Local Industry: City requested A.C.
13. Traffic Safety: Not a problem
14. Availability of an Adaption of Local Materials or of Local Commercially Produced Paving Mixes: Local materials are adaptable to this type construction.

CONCLUSION AND REMARKS:

No cost comparison made as this is a short (0.14 mi.) project.

See Items 6 and 12.

RECEIVED
JAN 30 1969
OFFICE OF
STATE HIGHWAY ENGINEER

PREFIX NO. 308-1403

1-29-69

LOCATION PROSPECTUS
BROOKINGS (FERN AVENUE) SECTION
CITY STREET - CURRY COUNTY

HIGHWAY: Fern Avenue in Brookings. Not on Federal-aid or State system.

TERMINI: The northerly terminus is at the southerly side of Pacific Avenue. The southerly terminus is at the northerly side of Chetco Avenue (Coast Highway).

LENGTH: 0.14 mile.

PROGRAM: 1969 Special City Allotment Funds.

NARRATIVE: This will be a location survey to prepare plans, specifications and cost estimates for grading and paving on existing alignment. Soils investigations will be conducted. Drainage problems are not anticipated. An economic analysis is not needed at this time.

TYPICAL SECTION: 42-foot curb-to-curb street section with a 5-foot sidewalk along westerly side.

BASE DESIGN: Tentative base design for construction is:

3"	A.C.
2"	Leveling
13"	Stone Base
18"	Total

NOTED
F. B. KLABOE

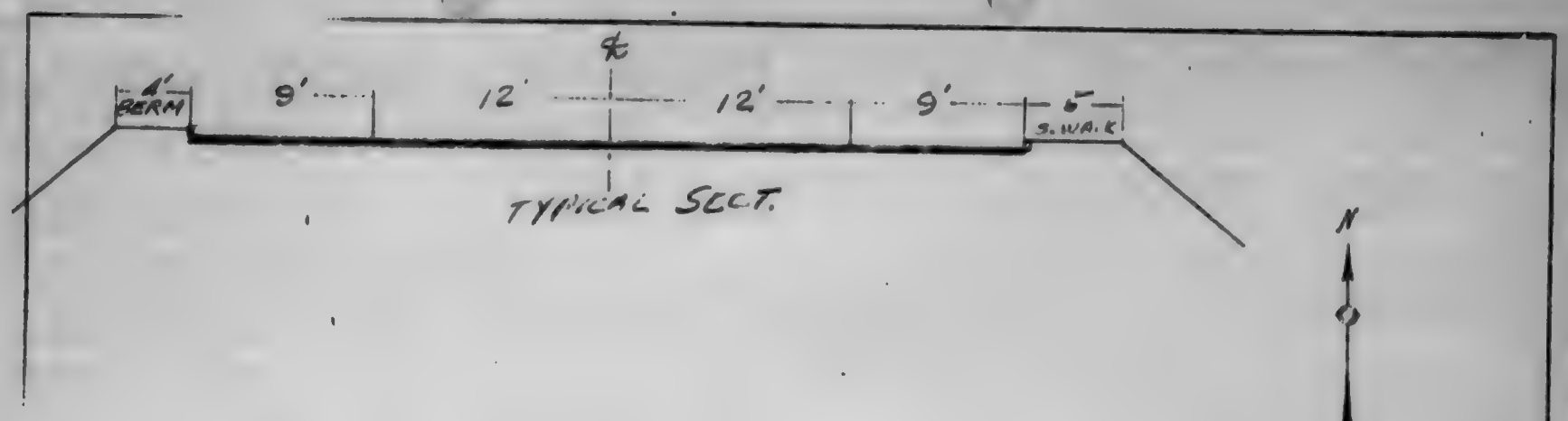
MATERIAL: County or commercial sources.

UTILITIES: Utility adjustments are City responsibility.

AGREEMENTS: Routine agreements for Special City Allotment project.

PARKS: None.

January 29, 1969
Attachment
cc: C.T. Keasey (3)
F.B. Klaboe
F.B. Crandall
Ivan Merchant (4)
L.H. Young
H.S. Cox (2)
V.J. Johnson
Jack Rowland
F.E. Terpin
Forrest Cooper
V.D. Wolfe
F.L. Hall
D.H. Moehring (3)
J.M. Cartwright (2)
B. L. Gifford
A.D. Olson
Robert Royer
O.C. Turner
Tom Edwards
D.J. Barbee
E.S. Hunter
F.D Morgan
R.N. Chase
W.N. Hackleman
R.E. Olson
W.H. Tebeau
F.W. Yarbrough (2)



TYPICAL SECT.

SIGNED ROUTES

INTERSTATE 0

U.S. 00

ORE. 00

LEGEND

- Post Office
- Public Bldg.
- School
- CH – City Hall
- CT – Court House
- R.R. Depot
- A – Armory
- L – Library
- Street open for travel.
- Street dedicated but not open.
- City Limits.
- City Center M.P. log

BROOKINGS

CURRY COUNTY, OREGON

PREPARED BY THE

OREGON STATE HIGHWAY DEPARTMENT

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

BUREAU OF PUBLIC ROADS

Population 2,700

Scale in Feet

Revised June 1968

SHEET 2 OF 2 SHEETS

RECEIVED
JAN 24 1969
FOR FILING

308-17017

7279

January 24, 1969

MISC. CONTRACTS and AGREEMENTS No. 3670

City of Brookings
City Hall
Brookings, Oregon 97415

Attention: Robert O. Dimmick, Jr.
City Recorder

Gentlemen:

Attached for your records is a fully executed copy of an agreement covering improvement to Fern Avenue in your city.

We have retained a fully executed copy of this agreement for the Commission's files.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

fkm
Attachment

cc H. S. Cox
(conformed agreement)

SCA

Form E-30—2000—8-68

OREGON STATE HIGHWAY DEPARTMENT

AUTHORITY FOR SURVEY

Section Fern Avenue in Brookings (FERN AVE.) Date January 15th 19 69

Highway City Street Authorization No.

County Curry Div. 3 Survey Prefix 308-1403
(Assigned by Salem office)

Description of termini, route, length, etc.:

Route to follow the center line of Fern Avenue from the south side of Pacific Avenue to the north side of Chetco Avenue (Oregon Coast Highway). Overall length is 0.14 miles

RECEIVED
JAN 29 1969
ENGINEER
COUNTY & CITY DIVISION

Purpose of survey:

Prepare plans and estimates for grading, surfacing and paving. Includes curbs sidewalk and storm sewers.

Estimate of cost:

Field Survey	901	$2,000.00
Plans	905	200.00
Soils	910	200.00
Utility	914	100.00

INSTRUCTIONS

Submit three copies to Salem. After approval by the State Highway Engineer, one copy will be sent to the Division Engineer and one copy to the Resident Engineer.

This form does not constitute authority for making survey until approved and returned.

Submit separate order for each survey.

Total estimated cost of survey . . . . . $ 2,500.00

Previous authorization . . . . . .

Additional authorization requested . . . . .

Additional authorization approved (Salem) . .

Total all authorizations approved (Salem) . .

Requests made by: W. F. Lippman Field Engineer

Recommended for Approval: NOTED H. S. COX John Clement Asst. Division Engineer

State Printing 37006

Recommended for Approval: D. J. Bubel Design Engineer

Approved: W B Klebe Ass't State Highway Engineer

PROGRAM & PLAN. DIV.
P. E. APPR. .....
REG. - A.D ..... STATE ✓ ...

NOTED
RICHARD UNREIN

NOTED
DON HARWELL

December 18, 1968

Mrs. Marjorie McKernan
City Recorder
P.O. Box "C"
Brookings, Oregon 97415

Dear Mrs. McKernan:

On December 17, the State Highway Commission approved the City's request for a 1969 Special City Allotment project to be constructed from funds authorized by ORS 366.805.

The project was approved on the basis of the attached project description and city map showing, colored in red, the limits of the approved project. Also attached are regulations pertaining to these projects.

You will be contacted in the near future concerning construction details.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

H. S. Cox
County and City Engineer

HSC:mb

Attachments
cc O. T. Kenney

NOTED
RICHARD UNREIN

NOTED
DON HARWELL

City: Brookings
County: Curry
Division No.: III
Population: 1963 2,617
1968 2,700
Previous Projects 4
Previous Amount $ 70,000
Last Project 1962

PROPOSED PROJECT - 1969:

Grade and pave Fern Avenue from Pacific Avenue to Chetco Avenue. Provide 42' curbed street section.

Length of project: 0.14 mile.

Base design: 13" coarse crushed, 2" level course, 3" asphaltic concrete.

	S.C.A.	City	Total
Estimated Cost:	$25,000	$10,000	$35,000

Remarks:

Existing street is in a very deteriorated condition. Provides access for large residential area into central business district.

Recommendation: Approval recommended.

CITY OF BROOKINGS
The Home of Winter Flowers
Phone (503) 469-2163
898 Elk Drive
P. O. Box 'C'
Brookings, Oregon 97415

NOTED
H. S. COX

December 3, 1968

State Highway Department
Salem,
Oregon 97310

Attention: Mr. H.S. Cox, County-City Engineer

Dear Mr. Cox:

With regards to the Fern Avenue State Aid Street Improvement Project, please be advised that the City of Brookings, in co-operation with Curry County, would be willing and able to pay all costs of the project in excess of the states share of $25,000.

Thank you for your patience and co-operation.

Very Truly Yours,
City of Brookings

Bruce J. Manley
Bruce J. Manley, Mayor

BJM:bp

NOTED
HAROLD REYNOLDSON

RECEIVED
DEC 4 1968
ENGINEER
COUNTY & CITY DIVISION

NOTED
P. B. Arensmeier

NOTED
R. H. PRANGE

NOTED
RICHARD UNREIN

NOTED
MAINOR C. HOLMES

NOTED
DON HARWELL

SCA

NOTED
H. S. COX

October 28, 1968

Mr. Jerry R. Swanson
City Draftsman
P. O. Box C
Brookings, Oregon 97415

Dear Mr. Swanson:

We have reestimated the cost of the proposed Fern Avenue project based upon a 42' curbed street section and the availability of asphaltic concrete pavement locally. We now roughly estimate the cost at $35,000; State's share - $25,000. (C.I.S. $10,000 I)

Please consider the foregoing and, if this meets with the approval of the City, we would appreciate a letter stating the City's ability and willingness to proceed on this basis.

Very truly yours,

H. S. Cox
County and City Engineer

By

NOTED
RICHARD UNREIN

Richard Unrein
Field Engineer

RU:mm

NOTED
HAROLD REYNOLDSON

NOTED
P. B. Arneson

NOTED
MAINOR C. HOLMES

NOTED
DON HARWELL

NOTED
H. S. COX

September 9, 1968

Mr. Robert O. Dimmick, Jr.
City Recorder
P.O. Box G
Brookings, Oregon 97415

Dear Mr. Dimmick:

It is planned to submit your proposed project on Fern Avenue, from Pacific Avenue to Chetco Avenue, to the Highway Commission for consideration of construction (1969) under the Special City Allotment Act (ORS 366.805).

width ?

Your proposed project, based upon a reconnaissance investigation, is roughly estimated to cost $40,000 for providing a 44-foot curbed street costing State's share - $25,000. (15,000?)

Should the Highway Commission look with favor on your project, would the city of Brookings be willing and able to pay all costs of the project in excess of $25,000?

Early receipt of a letter stating the city's ability and willingness to participate in the above project would be appreciated.

Very truly yours,

H. S. Cox
County and City Engineer

by

NOTED
RICHARD UNREIN

Richard Unrein
Field Engineer

Council meets - Sept 10, & Oct 8.
RUnrb

NOTED
DON HARWELL

1953 15,000
1956 15,000
1959 20,000
1962 20,000

S.C.A. Investigation Data

City of BROOKINGS Date 3-26-68 Div. 3
Population: 1968 2700 1963 2617
Street FERN AVE. FROM PACIFIC AVE TO CHETCO AVE. (Hwy 101)

No. previous projects 4
Last project 1962 (year)
Total SCA funds $ 70,000
Funds/capita $ 25.93
Average/capita $ 18.44

EXISTING

Surface now in place: A.C. — Oil X Gravel — Concrete —
Surface width: 18' feet, Shoulder-shoulder width: 25' feet
C-C width: — feet, R/W width: 60' feet
Remarks: Existing Oil Mat in good condition. Receives fairly heavy volume of traffic. Met with Jerry Swanson, City Asst Supt. He said to delete conc. sidewalks.

(Need soil 1966 investigation) good project

PROPOSED

Surfacing: A.C. X Oil — Other —
Pave. width: ~~42~~ 46 feet, Shoulder width — feet, C-C width: 46 feet
BASE DESIGN: A.C. 3" inches, Leveling 2" inches, Base 13" inches
Lime T.S.G. — inches, Blanket — inches, P.M.B.B. — inches
Length: 0.14 mile, 720 feet. Type curb: "C"
Remarks: Clay soil may react with Lime treatment

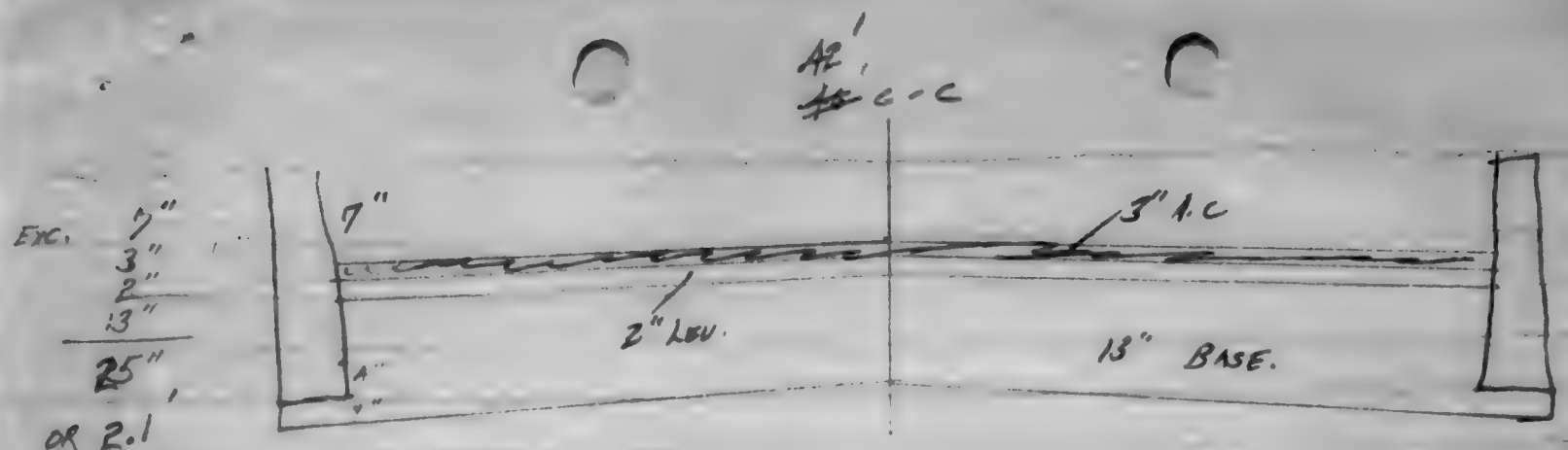
ESTIMATE Item	Unit	Gross*	Price	Amount
Temp. protection & direction of traff. ($500-$1,000)	all	all	$ L.S.	$ 500.00
Clearing & grubbing	all	all	L.S.	300.00
General excavation	c.y.	3,200	1.50	4,800.00
Finishing roadbed & slopes ($1,500)	mile	0.14	1,500.00	210.00
Trench excavation	c.y.	70	3.50	245.00
Watering	M-gal.	70	4.00	280.00
Level material (3/4-0) 2"	c.y.	320	4.25	1,360.00
Base material 13"	c.y.	2,080	3.75	7,800.00
Asphalt 3"	ton	715	~~8.50~~	6,077.50
Binder	all	all	L.S.	590.00
Concrete inlets	each	6	150.00	900.00
Culvert pipe 12"	lin. ft.	400	3.75	1,500.00
Concrete curbs 1500' Type "C"	c.y.	47	60.00	2,820.00
Conc. Driveways	Sq. yds.	120	5.50	660.00
Adj. M.H.'s	EA.	2	100.00	200.00

*Items include 10% allowance

Total	$ 28,242.50
Perm. signing ($100/intersection)	200.00
Flagging	50.00
Total	$ 28,492.50
Engineering & contingencies (20%)	5,698.50
Total	$ 34,191.00
City's estimated share of survey	403.22
TOTAL ESTIMATED COST	$ 34,594.22

(£ 35,000

BROOKINGS
FERN AVE.
3-26-68



GEN EXC. = $\frac{2.1 \times \overset{44}{\cancel{48}} \times 850 \times 1.1}{27}$ = 3,200 ~~3,500~~ C.Y.

TR. EXC. = $\frac{2.2 \times 2.2 \times 400}{27}$ = ~~70~~ 67 C.Y.

WATER = .0225 x ($\frac{2400}{\cancel{2,650}}$) = ~~70~~ ~~85~~ M-GAL.

LEV. = $\frac{.17 \times \overset{A2}{\cancel{46}} \times 850 \times 1.43}{27}$ = 320 ~~350~~ C.Y.

BASE = $\frac{1.08 \times \overset{42.8}{\cancel{46.8}} \times 850 \times 1.43}{27}$ = 2080 ~~2280~~ C.Y.

3" A.C. = $\frac{\overset{84.3}{\cancel{92.5}}}{}$ x 8.5 = 715 ~~785~~ TON.

BINDER = $\frac{\overset{4,200}{\cancel{4,600}}}{}$ X .14 = $ ~~590~~ 590

TYPE "C" CURB = .031 X 1500' = 47 C.Y.

CONC. DRIVEWAYS = $\frac{200 \times 6.5}{7}$ = 120 Sq. yds.

SURVEY EST. = $1500

$\frac{9,191}{\cancel{12,014}}$ / $\cancel{37,014}$ / 34,191 X 1500 = $ 403.22

$\frac{\cancel{14,009}}{\cancel{39,009}}$ X 1500 = $ ~~538.65~~

60
2.4
140
120
168.0

50
2.8
400
100
140.0

60
.17
13

Pacific Ave.
140'

12"

Existing

Brocking S
Fern Ave.
3-26-68

(.14 mile)

Length = 720
+ 125'
845
850 computing

N

DWY
20

24'
DWY.

AVE.

36'

20'

Inlets	8" pipe	Adj. M.H.'s	DWY.S
5	140'	(2.)	44
1	165		36
(6)	60		100
	365		180
	37		18 (10%)
	402		
	(400)		

200 X 6.5 / 9 = 5p. p/s.

720'
720'
1440
60
1500

16'
DWY
FERN

20
DWY

R

165'

EXIST
60'
REPLACE

30'
DWY

175'

DWY.
20'

50'
DWY

EXIST.

EXIST

HWY.

SCA

NOTED
H. S. COX

PROJECT DATA, CITY OF BROOKINGS Date February 20, 1968

To be financed by Special City Allotment Fund and necessary city funds.

Street name Fern Street
(Locate project on attached map.)

Project length 720 feet

DESIRED STREET SECTION:

Standard roadway; width of travel way: _____ feet, width of shoulders: ____ feet

Curbed section; width curb to curb: ~~46~~ 42' feet

Remarks Lower roadway section at U.S. 101 will be a 50° width, curb face to curb face

Surface now in place: Oil ____ Paving X Gravel ____

Present surface width: 18 feet 46 feet at U.S. 101 for about 120 feet

RIGHT-OF-WAY: (City shall, without cost to State, provide all right-of-way required)

Width of present right-of-way: 60 feet

Additional right-of-way required? Yes ____ No X

State to furnish right-of-way descriptions? Yes ____ No X

Give width of intersecting streets: 5-40° r/w streets; 2-14 foot alleys

Are intersecting streets curbed? Yes X No X

Remarks U.S. 101 at Fern is curbed; Pacific Ave and one connector street is curbed.

CONCRETE CURBS: (All new curbs to be constructed at city's expense.)

Now in place? Yes ____ No X

Width between present curbs: _____ feet

City to construct curbs? Yes ____ No X

To be constructed as part of project? Yes X No ____

Length of desired radius on curb returns: 10-15 feet

Does city desire special type of curbs? Yes ____ No X

Explain: _____

NOTED
RICHARD UNREIN

RECEIVED
FEB 23 1968
ENGINEER
COUNTY & CITY DIVISION
NOTED
DON HARWELL

SIDEWALKS (All new sidewalks to be constructed at City's expense.)- - - - - -

Are sidewalks now in place? Yes___ No x

Present sidewalks, Length: _____feet; Width:_____feet

Distance between present sidewalks: _____feet

Are sidewalks to be constructed as part of project? Yes x No ~~x~~

Width of sidewalks to be constructed: 5 feet westerly; 8 feet Easterly

Are sidewalks to be constructed only on one side of street? Yes ~~/~~ No x

Are sidewalks to be constructed on both sides of street? Yes x No ~~x~~

Give: Length to be constructed and On which side of street

645 feet N.___ S.___ E.___ W.ly x

720 feet N.___ S.___ E.ly x W.___

Should sidewalks be placed against curbs? Yes x No___

Is utility strip required? Yes___ No x ; Width: _____feet

Remarks Concrete sidewalk construction not definite at this time. Out

---

STORM SEWERS -

Now in place?. Yes___ No x

If yes, are they adequate for increased flow? Yes___ No___

Indicate depth of main lines from present surface: _____feet

To be constructed by City? Yes___ No x

To be constructed as part of project? Yes x No___

/Show location of outfall on city map./

SANITARY SEWERS -

Now in place? Yes x No___ /NOTE: City to adjust if required./

If yes, indicate depth of sewers from present surface: Min 3 feet

Remarks _____

NOTED
RICHARD UNREIN

WATER MAINS: (City to adjust if required.)

Now in place? Yes x No ___

If yes, how deep from present surface? 2½ feet

Remarks _____

_____

DRIVEWAYS: (All driveway construction beyond curb line to be at city's expense.)

To be constructed as part of project? Yes x No ___

Asphaltic concrete? Yes ___ No x

Portland cement? Yes x No ___

How many? 7

Must driveways be Portland cement to comply with city code? Yes ___ No x

Is there a city ordinance specifying width and number of driveways permitted?
Yes ___ No x (If yes, please include copy of ordinance.)

Remarks _____

_____

FRANCHISED UTILITIES: (City is to arrange for any required adjustment.)

Gas lines? Yes ___ No x

Electric poles? Yes x No ___

Which company? Coos-Curry Electric Co-op
(NOTE: If city-owned, city to adjust.)

Telephone poles? Yes ___ No x

Which company? _____

Railroad tracks? Yes ___ No x

Which company? _____

Is crossing presently protected by automatic railroad signals?

Yes ___ No ___

Remarks _____

_____

NOTED
RICHARD UNREIN

WORK TO BE DONE BY CITY AS PART OF PROJECT:

Grading? Yes ___ No X

Clearing? Yes ___ No X

Base rock? Yes ___ No X

Concrete curbs? Yes ___ No X

Driveways? Yes ___ No X

Remarks _____

GENERAL INFORMATION:

Are city finances available? Yes X No ___

When available? Date After construction contract is let, assessment per front foot of abutting properties will be made.
Curry Co. Aid.

Has city established grade on street? Yes ___ No X
(If yes, please include copy of data.)

Please indicate site for disposal of excess excavated material: _____

Willow Street between Railroad and Hemlock streets

General remarks: _____

By Bruce J. Mawley
Mayor

By Robert O. Wimmich Jr.
City Recorder

By J A Martin
City Engineer

NOTED
RICHARD UNREIN

RECEIVED
FEB 16 1968
ENGINEER
COUNTY & CITY DIVISION

RESOLUTION No. 130

WHEREAS, under the provisions of ORS 366.800 and 366.805 there has been withdrawn from state highway funds appropriated for allocation to the several cities of the State of Oregon the sum of Two Hundred Fifty Thousand and No/100 ($250,000) Dollars, and said sum has been set up in a separate account to be administered by the State Highway Commission and to be spent each year by said Commission upon streets not a part of the state highway system, within cities, which are receiving excessive wear through sudden increases in population in the area or heavy and unusual traffic; and

WHEREAS, the City of Brookings is an incorporated city of the State of Oregon and has a population of 2700 as given by the latest official census; and

WHEREAS, the following streets of said city, Fern Street, between U.S. 101 and Pacific Avenue,

are not a part or parts of the state highway system, but are streets under the jurisdiction and control of said city which are "receiving excessive wear through sudden increase in population in the area, or heavy and unusual traffic," and

WHEREAS, said streets are and each of them is in need of repair, reconditioning, and other major improvement,

NOW, THEREFORE, the members of the City Council, in regular or special session assembled, do hereby find, declare, and resolve:

1. That the aforesaid named streets of said city are in need of repair, reconditioning, and other major improvement.

2. That said streets are in their present state and condition of disrepair by reason of excessive wear through sudden increases in population in the area, or by heavy and unusual traffic.

3. That the Oregon State Highway Commission hereby is respectfully requested to consider and declare said streets as qualified for reconditioning, repair, and other improvement out of funds allocated and made available by and through the said $250,000 appropriation of state highway revenues which is to be administered and spent by the Highway Commission.

(cc-50, 1959 Rev.)

NOTED
RICHARD UNREIN

4. That the City of Brookings does hereby offer to State Highway Commission, and does hereby pledge complete cooperation and assistance to the end that said city may share and participate in the use and benefit of said special fund and appropriation; and therefore does designate Jerry R. Swanson as the official representative of the city in all negotiations resulting from this request.

Passed and approved this 13th day of February, 1968.

There is attached hereto and made a part hereof, a city map on which is indicated the street, streets, road, or roads described in this resolution.

- - - - - - - - - - - - - - - - - -

I hereby certify that the foregoing resolution was passed and approved by the City Council of the City of Brookings at a regular ~~special~~ meeting of said Council, held on the 13th day of February, 1968, and the above copy is a true and correct copy of the original and of the whole thereof.

Dated this 13th day of February, 1968.

CITY OF BROOKINGS

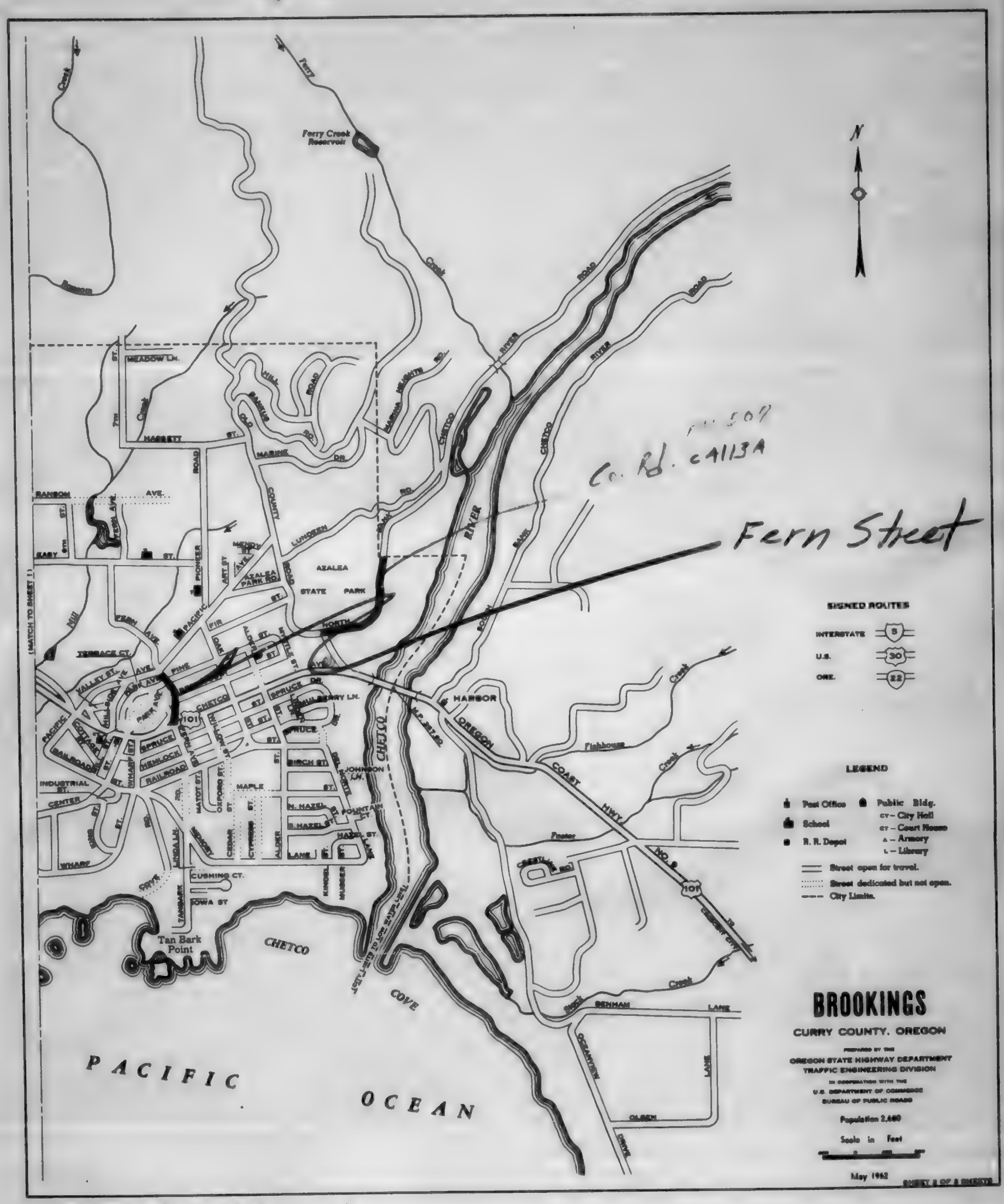
Robert O. Dimmick Jr.

City Recorder

Robert O. Dimmick, Jr.

NOTED
RICHARD UNREIN

(cc-50, 1959 Rev.)


Ferry Creek Reservoir
Ferry Creek
Creek
Creek

DAWSON
RD.
OREGON
101
Creek
HEIGHTS
ROAD
HARRIS
M.P. 355.35
Harris
HARRIS
BEACH
STATE
PARK
COAST
ROAD
DODGE
AVE.
Creek
PARK CT.
PARKVIEW
DR.
Arch
Rock
Pacific
Ocean
RANSOM
AVE.
HWY.
W. MARVISTA
E. MARVISTA
EASY
ST.
CHETCO
AVE.
MOORE ST.
HUB ST.
19th ST.
ALPINE ST.
FIFIELD ST.
COLLINS LN.
ARNOLD
TRUMAN
BARCLAY LN.
Fountain
Rock
Log Pond
MILL
BEACH
CENTER ST.
Zwarts
Island
MACKLYN
COVE
Chetco
Point
Walrus
Rocks
N
SIGNED ROUTES
INTERSTATE 5
U.S. 20
ORE. 22
LEGEND
Post Office
School
R. R. Depot
Public Bldg.
CH – City Hall
CT – Court House
A – Armory
L – Library
Street open for travel.
Street dedicated but not open.
City Limits.
BROOKINGS
CURRY COUNTY, OREGON
PREPARED BY THE
OREGON STATE HIGHWAY DEPARTMENT
TRAFFIC ENGINEERING DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
Population 2,600
Scale in Feet
May 1962
SHEET 1 OF 2 SHEETS

I-5-3(84) Cabin Cr. Safety Rest Area, 1969
145 Pacific Hwy., N. of Roseburg.
#7280 (Water system & access road)

RECEIVED
SEP 2 - 1971

FORM E-30 (12-67)
FOR FILE
J-5-3(84)145
7280

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
August 30, 1971

SUBJECT: Analysis of Water System
Cabin Creek Safety Rest Area

To: F. B. Klaboe
Asst. State Highway Engineer
Oregon State Highway Building

Attached is a report prepared by Bill Milne concerned with the subject well situation.

Mrs. Morris had been over pumping her well lately, and, as a result, there has been considerable draw down and an increase in the salt content. It was necessary to shut down Well No. 8 and depend on Well No. 9 for potable water supply.

A meeting was held this date with:

F. B. KL

W. S. Bartholomew, State Engineer's Office
James Carver, State Engineer's Office
C. T. Keasey, Region III Engineer
Elliott Parker, Region III
John Demezas, Asst. Geologist
W. P. Milne, Geologist
Jack Sollis, Legal

It was decided to request a hearing and settlement thru the State Engineer's Office, limiting the pumping on Mrs. Morris's well within legal limits.

This action is necessary to protect the existing water system, and plans for expansion will hinge on future performance of the wells.

Roy E. Olson
Landscape Engineer

RECEIVED
AUG 31 1971
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
E. S. HUNTER

FORM E-30 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
August 25, 1971

To: Mr. F. W. Yarbrough
Geology and Soils Engineer

O F F I C E

SUBJECT: Review of Water System
Cabin Creek SRA
Pacific Highway, I-5
Douglas County

Ref: Letter to R. N. Bothman from
C. T. Keasey, April 27, 1971

At the request of Roy Olson, Landscape Engineer, the above review was recently completed. Based on data obtained to date, it is recommended that:

1. Well #8 be plugged back 15 to 20' maintaining a total depth of 120'.

2. Pump in well #8 be set at 100 to 110' deep, and be adjusted to pump at a rate of 30 gpm.

3. Mrs. Morris' well be pumped at no more than 30 gpm irrespective of the total daily amount allowed.

   a. Either buy the well and incorporate it into our system,

   b. or push the filed complaint, obtain a hearing and settlement through the State Engineer's office by way of legal.

4. A local water critical area designation be obtained from the State Engineer for the site.

The above four steps are necessary to protect the $96,000 water system investment.

As far as expansion of the rest area is concerned, it is suggested that:

RECEIVED
DESIGN SECTION
Scott
Return To
Other

5. Since we purchased 74 acres from Churchill, et al, and 62 acres from L & E Moothart for a scenic strip, to protect our water recharge, and provide an area for well development, Turkey Hill be exploited before turning to other options.

6. Since it has been suggested that the Oregon Water Corp. serving the city of Oakland could supply the water needed, the ability of the Corporation to supply 20,000-40,000 gal. per day during the critical time of the year be determined. Most water districts throughout Oregon have had to restrict lawn irrigation at times.

7. Since there has been considerable recent development in desalting techniques, it be ascertained if there is a practical economical model which could be incorporated into the system.

Discussion

The above course of action has been referred to in previous reports either as a direct recommendation or as an alternative based on the then existing data and behavior projection or data to be obtained during the past two years of usage. It is to be noted in these reports that the present problem was anticipated if the Morris well were pumped at the rate of 100 gpm for any length of time.

In early summer of 1970, Mrs. Morris pumped over 2,000,000 gallons of water on the ground in two week's time. This lowered the pumping levels below critical level in all three wells bringing about salt water encroachment and contamination. After her well was shut off, water levels returned to acceptable height; however, the damage was done. Evidence now indicates she has done the same this year. Evidence also shows that her well can not sustain a pumping rate of more than 30 gpm even if there were no salt problem.

In connection with recommendations 1 and 2, it is felt that salt water encroaches first through the 136' zone, and by plugging that zone, well #8 could be kept on the line. The concrete plug should be placed in the bottom of the hole with a drop pipe or bailer.

It must be emphasized that to produce water from this situation, fresh water wedge over connate salt water, a pressure gradient balance must be maintained. The drawdown must be such as to allow the fresh water to move in laterally and not allow the salt water to cone into the wells. Both long-term light over pumping and short-term surge pumping will bring salt water into wells. This is the reason that in previous reports it was recommended that the pumping levels be maintained as high above 70' as practical. We have, in other words, a good workable water system that has been abused.

In connection with points 5 and 6 it is possible to develop more fresh water in the vicinity of Turkey Hill by means of the multiwell techniques. The size of the expansion will have to be limited to the amount of water that can be developed. It is suggested, that prior to any detailed planning, additional geological and geophysical work be done.

Admittedly this is an annoyingly complex system to maintain but simple systems are fast becoming the exception.

NOTE: Supportive data on file both in Regional and Salem Geology and Soils office.

William P Milne
William P. Milne
Geologist

John F. Demezas
John F. Demezas
Geologist

WPM-JFD:bb
cc: W. H. Tebeau
Roy Olson
C. T. Keasey
E. Parker

STATE COPY

Monthly transaction number 8-93	U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION Bureau of Public Roads	State Oregon
Project report number 10	**MODIFICATION OF FEDERAL-AID PROJECT AGREEMENT**	County Douglas
Modification number 1	(PPM 21-7) 8-25-71	Project number I-5-3 (84) 145

The Project Agreement for the above-referenced project entered into between the undersigned parties and executed by the Division Engineer on July 10, 19 69, is hereby modified as follows:

	Former amount	Revised amount
Estimated total cost of project	$ 74,454.00	$ 74,391.50
Federal funds	$ 68,600.00	$ 68,633.60
Other revisions		

This modification is made for the following reasons:

Based on Final Voucher

All other terms and conditions of the Project Agreement will remain in full force and effect.

This modification is effective as of the 25th day of August, 19 71.

Oregon State Highway Division
(Official name of Highway Department)

By _____

Assistant State Highway Engineer
(Title)

By _____

(Title)

By _____

(Title)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

By L. R. Backlund
for (Division Engineer)

Form PR-2A (Rev. 4-70) Existing stocks of Form PR-2A (Rev. 10-68) will be used.

STATE COPY

Form Approved; Budget Bureau No. 41-R2089.1

MONTHLY TRANSACTION NO.	FORM PR-2 (REV. 3-66) U.S. DEPARTMENT OF COMMERCE BUREAU OF PUBLIC ROADS	STATE
P-1		Oregon
PROJECT REPORT NO.	**FEDERAL-AID PROJECT AGREEMENT** (PPM 21-7) 7-18-69	COUNTY
4		Douglas
		PROJECT NO.
		I-5-3(84)145

The State, through its Highway Department, having complied, or hereby agreeing to comply, with the terms and conditions set forth in (1) Title 23, U.S. Code, Highways, (2) the Regulations issued pursuant thereto by the Secretary of Commerce and, (3) the policies and procedures promulgated by the Federal Highway Administrator relative to the above designated project, and the Bureau of Public Roads having authorized certain work to proceed as evidenced by the date entered opposite the specific item of work, Federal funds are obligated for the project not to exceed the amount shown herein, the balance of the estimated total cost being an obligation of the State. Such obligation of Federal funds extends only to project costs incurred by the State after the Bureau of Public Roads authorization to proceed with the project involving such costs.

PROJECT TERMINI

Cabin Creek Safety Rest Area on the Pacific Highway

PROJECT CLASSIFICATION OR CLASS OF WORK	EFFECTIVE DATE OF AUTHORIZATION	APPROXIMATE LENGTH (Miles)
HIGHWAY PLANNING		
PRELIMINARY ENGINEERING		
RIGHTS-OF-WAY		
CONSTRUCTION	6-4-69	0.00
OTHER (Specify)		

FUNDS Pro Rata 92.25 %

ESTIMATED TOTAL COST OF PROJECT	FEDERAL FUNDS
$ 74,454.00	$ 68,600.00

The State further stipulates that pursuant to said Title 23, Regulations, and policies and procedures, and as a condition to payment of the Federal funds obligated, it accepts and will comply with the applicable provisions set forth on the reverse hereof.

OREGON STATE HIGHWAY DEPARTMENT
(Official name of Highway Department)

By P K Klobon

Assistant State Highway Engineer
(Title)

By _____

(Title)

By _____

(Title)

U.S. DEPARTMENT OF COMMERCE

BUREAU OF PUBLIC ROADS

By P K Green
(Division Engineer)

For: R. E. Simpson

Date executed by Division Engineer JUL 18 1969

Oregon State Highway Department

Federal Aid
Project No. I-5-3(84)145

CABIN CREEK SAFETY REST AREA ON THE PACIFIC HIGHWAY IN DOUGLAS COUNTY

Project agreement estimate.

Salem, Oregon, July 10, 1969

Type Code Y021
Water System and Access Road (Sta. 1450+00)(Contract No. 7280)

Temporary Protection and Direction of Traffic	All Required		$ 1,000.00
General Excavation	All Required		2,500.00
Embankment in Place	550 cu.yd.	$ 6.00	3,300.00
Trench Excavation	40 cu.yd.	4.00	160.00
Watering	20 M-gal.	6.00	120.00
Pavement Replacement	66 lin.ft.	3.00	198.00
3/4" - 0 Material in Base	160 cu.yd.	4.25	680.00
Stone Base	300 cu.yd.	4.00	1,200.00
12-inch Culvert Pipe	200 lin.ft.	4.75	950.00
14-foot Steel Entrance Gate	1 only	550.00	550.00
Pump Control Building	All Required		4,950.00
Well Housings	2 only	490.00	980.00
5 HP Submersible Pump Installations	2 only	4,200.00	8,400.00
6-inch Asbestos-Cement Water Main	725 lin.ft.	2.40	1,740.00
4-inch PVC Water Main	12,000 lin.ft.	2.10	25,200.00
Valve M.H. w/Wrench-Lock Cover	4 only	560.00	2,240.00
4-inch Asbestos-Cement M.H. Drain	1,250 lin.ft.	0.95	1,187.50
Modification Work	All Required		900.00
Chlorination Installation	All Required		1,500.00
50,000 Gallon Redwood Reservoir	All Required		8,730.00
Miscellaneous Pipe Line Control Valves	All Required		1,100.00
			$ 67,585.50
Flagging (60% of contractor's costs)	All Required		100.00
	Subtotal		$ 67,685.50
	10% Engr. & Cont.		6,768.50
	Total		$ 74,454.00

Length of Project - - - 0.00 mile

Summary of Funds

Federal Funds -	$68,600.00
State Funds -	5,854.00
Total	$74,454.00

State Funds for Const.: Chap. 175, Laws 1917; Chap. 31, Laws 1920;
Chap. 529, Laws 1939.
State Funds for Maint.: Chap. 529, Laws 1939.

Group 1- 100%

Prefix 610-1030

RECEIVED
AUG 16 1971
FOR FILING

I-5-3(84)145
.7280

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
August 11, 1971

To: Memo to File

SUBJECT: Excessive Salt - Potable Water
Cabin Creek Safety Rest Area
M.P. 142 - I-5

I have reviewed the file concerning the unsuitable water supply due to excessive salt content in the Cabin Creek Safety Rest Area. In summary, the situation is as follows:

(1) When constructed, the rest area water supply was unsuitable due to excessive salt content.

(2) The following expenditures have occurred since then in an attempt to obtain potable water:

1967 - Well drilling (Maintenance)	$ 2,300
1968 - Well drilling and testing (preparation for contract)	10,035
1969 - Water System Contract	83,697
Total	$96,032

(3) The adjacent property owner applied in July 1970, for a water permit. Highway objected through the State Engineer's office.

(4) Adjacent property owner drilled well and continues to use same for stock and irrigating a 5-acre or smaller tract of land.

(5) During July, August, and September, the two Highway wells show excessive salt. Maintenance crews haul water for drinking.

(6) Rest Area construction program calls for expansion in 1978.

(7) Field estimates that a connection to the Oregon Water Corporation, which supplies the municipalities of Oakland and Roseburg, would cost $100,000.

It is recommended that this connection be contracted in the 1978 expansion. Until then, water can be hauled during those periods when the salt content is excessive.

E. S. Hunter
Assistant State Highway Engineer

cc Tom Edwards
F. B. Klaboe
R. N. Bothman
Roy Olson
C.I. Keasey

ESH:ms

Oakland Municipal
Roseburg
Oregon water Corp.

FORM E-20

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
April 28, 1971

SUBJECT: Cabin Creek Safety Rest Area
M.P. 142 - 143
Pacific Highway, I-5

To:
A. E. Johnson
Asst. State Highway Engineer

B u i l d i n g

Since 1967, the State has spent $96,000 to obtain water for this rest area. The problem is not quantity of water but quality of water.

The potable water is in a salt dome formation and any extensive use of water in the late summer months causes salt water to intrude. The salt content exceeds U. S. Public Health standards and the Maintenance Section must import water by tank truck.

Our present well system was placed in service in February, 1970, but an adjacent property owner drilled a well and by extensive pumping caused the water supply to turn salty at a faster rate. The Highway Division protested to the property owner and to the State Engineer. The property owner agreed to curtail the pumping rate, but it still leaves the water supply vulnerable. The salt water also causes the ground in the drain field to break down and effects the percolation necessary to dissipate the effluent.

The Region recommends two courses of action:

(1) Force the adjacent property owner to cease pumping in the vicinity of our supply wells. This should be handled through Jack Sollis at the Attorney General's office.

This would permit the rest area to function until 1978 when $470,000 is programmed to expand the rest area.

(2) Abandon the rest area in 1978 and use the $470,000 to build a new rest area in a more favorable water zone.

The attached letter by C. T. Keasey dated April 27, 1971 explains the problem more thoroughly; and the attached file covers the background information.

Robert N. Bothman
Maintenance Engineer

By Carl M. Williams

Carl M. Williams
Maintenance Operations Engineer

RECEIVED
APR 29 1971
OFFICE OF
STATE HIGHWAY ENGINEER

8-11-71 ret. & Maint.

CMW:mp

Attachments

FORM S-20 (REV. 10-69)

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Roseburg, Oregon
July 30, 1970

SUBJECT: Cabin Creek Safety Rest Area
I-5
Douglas County

To: A. E. Johnson
Asst. State Highway Engineer
S A L E M

Attached hereto is a report from John Hagedorn, Resident Engineer, regarding the high engineering charges on the subject project. In addition to the Resident Engineer's report, I would add the following information:

1. Had this project been completed in the allotted time, our overrun in engineering would have been minor. At the end of the specified work days, 89% of the engineering had been used.

2. The contractor was very slow in performing his work. A breakdown of man hours worked by the contractor indicates he averaged less than two men per day on the project.

3. Due to the contractor's "haphazard" operation, it was necessary to have an inspector checking on him at all times. Some days he would not show up and then work on the weekend without notifying the Resident Engineer.

4. On all of the projects in Region 3 which this contractor has had, he has overrun the time and has required constant inspection and engineering assistance in order to perform the required work. This has resulted in an overrun in engineering on all these projects.

5. A time extension on this project was recently submitted to Salem with the recommendation that no additional time be allowed for the completion of this project.

The Regional Office and Resident Engineer were well aware of the overrun in engineering charges throughout the life of this project and every attempt was made to keep the cost in line. With all of the inspection and documentation that is required on Federal Aid projects, we could not do less engineering than we did.

F. D. Morgan
for: JOHN QUINER II
Regional Construction Engineer

RECEIVED
AUG3 1970
OFFICE OF
STATE HIGHWAY ENGINEER

JQII/cw
Attach.
cc F. D. Morgan

FORM 850—SOM—8.67—1470

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Roseburg, Oregon
July 28, 1970

SUBJECT: Cabin Creek Safety Rest Area
Pacific Highway
Contract No. 7280
Engineering Costs

To: C. T. Keasey
Division Engineer
Roseburg, Oregon

Herewith attached is a breakdown of the engineering charges on the subject project.

In order to better analyze the engineering costs for the Cabin Creek Safety Rest Area Project I submit the following pertinent information:

At the time Cabin Creek was awarded (7/3/69) this engineering crew consisted of 4 men, one HE IV, Two HE I, one E.A. The monthly expenditures for this crew, including office rent, utilities, equipment rental, salaries, materials and supplies amounted to approximately $4,800.00

The Cabin Creek project had a calendar workday allowance of 60 days. On September 23, 1969 these 60 days expired. At that time our engineering expenditures were $6,025.00. The original engineering authorization was $6,768.84. Cabin Creek project was completed March 31, 1970, approximately 9 months from the date of award.

During these 9 months our normal engineering costs based on the above $4,800.00/month would be $43,200. Our actual engineering costs for the 9 months 7/1/69 through 3/31/70 amounted to approximately $36,805., or some $6,400. less than our normal 9 months operating costs. The loaning of men to other crews plus some charges to vacation and sick leave accounts for the difference.

Following is a breakdown of our engineering costs for the period 7/1/69 - 3/31/70:

Roberts Mtn. Slide, Cont. 7216		$7,460.
Prospect Rock Production Cont. 7267		2,005.
Cabin Creek Safety Rest Area Cont. 7280		18,140.
N. & S. Canyonville & West Fork Interchange Cont. 7302		9,200.
	Total	$36,805.

These costs are our field engineering costs and include laboratory charges. Mr. Johnson's letter of 7/23/70 indicates the final engineering cost of $21,187.36. Our field records show $18,315.92. I cannot account for the difference.

Several factors are involved in causing the engineering overrun. The primary cause in this case is the overrun of the contract time. In order to document the project an inspector has to be present at all times the contractor is working.

The Cabin Creek contractor averaged less than 3 men per day on this project, many days only one would appear. On numerous occasions the contractor wouldn't show up at all, at other times he would give notice that he would not work a given day and then change his mind without notification to us. He worked on Saturdays and late in the evenings without notification. Despite my admonitions against such practises, he persisted in not always informing me of his intentions. In self-defense an inspector had to be present at all times.

The documenting and procurement of materials certifications, written prior approval requests, etc., all are time consuming and costly. On the Cabin Creek job, the above was very much moreso because of the contractors procrastination and unwillingness to cooperate.

While we had a man on loan a good portion of the aformentioned 9 months period, we still had to borrow a survey party at various times. We couldn't have done the work with less personnel, and yet we couldn't have had much more work with the personnel we had, one res. engr., one officeman, one inspector for each job.

It all boils down to a fixed engineering cost versus so much money allowed for so much work available. Had the Cabin Creek job taken the allowed 60 days our engineering costs would have been very close to the authorization. Our costs for the first 60 days of this project was right at $3,000./month. Using our final field amount of $18,316., the final 7 months engineering costs was at the rate of $2,200./month.

Also attached is a copy of a previous report covering the same subject.

J. R. Hagedorn
Resident Engineer

MAN HOURS AND COST BREAKDOWN
Cabin Creek Safety Rest Area
Fed. Aide No. I-5-3(84)145
Douglas County
Contract No. 7280
Prefix 610-1030-900

		Costs	Man Hours Used Engineering	Inspection
July 1-Aug. 10:	Bridge costs by Howard Harris	-$ 900.00		
August 11-15	Time Report	- $ 598.47	48	64
	Bridge Cost	- 54.72		
	Equip. rental	- 25.00	—	—
	Total this week	- 678.19		
	Total to date	- $1,578.19	48	64

Field crew staking access road & emb. pads for pump house and wells. Inspection was on pump house & ditch work, Contractor man hours = 194.

August 17-23	Time Report	- $ 524.60	28	48
	Bridge Cost	- 136.00		
	Equip. rental	- 35.00		
	Rent	- 100.00	—	—
	Total this week	795.60		
	Total to date	$2,373.79	76	112

Engineering was on general office work, inspection was on ditch work. 40 contractor man hours.

August 25-29	Time Report	- $ 635.07	36	36
	Equip rental	- 40.00		
	Stamps	- 30.00		
	Telephone	- 33.15		
	Materials Lab.	- 26.50	—	—
	Totals this week	$ 764.72		
	Total to date	$3,138.51	112	148

Engineering and inspection was on ditch work and construction of the pump house. 210 contractor man hours.

Sept. 1-6	Time report	- $ 471.50	48	48
	Equip rental	- 41.00	—	—
	Total this week	$ 512.50		
	Total to date	$3,651.01	160	196

Engineering & inspection was on general office work as prior approval items and weekly reports. Inspection was on reservoir, pump house, wells, conduit under the pavement. 178 contractor man hours.

	Costs		Man hours Used	
			Eng'r.	Inspection
Sept. 7-13	Time Report	- $1,080.19	80	70
	Equip rental	- 42.00		
	Electric bill	- 7.30		
	Materials lab	- 34.50	—	—
	Total this week	$1,163.99		
	Total to date	$4,815.00	240	266

Engineering and inspection was on pump house, reservoir, well housings, ditches & conduit under the highway. 420 contractor man hours.

Sept. 14-20	Time report	- $ 677.00	36	66
	Equip rental	- 40.00		
	Materials lab	- 33.00	—	—
	Total this week	$ 750.00		
	Total to date	$5,565.00	276	332

Engineering and inspection was on reservoir, access road, pipe line const., and conduit under the highway. 345 contractor man hours.

Sept. 21-27	Time report	- $ 534.00	28	45
	Equip rental	- 41.00	—	—
	Total for week	$ 575.00		
	Total to date	$6,140.00	304	377

Engineering and inspection was on water lines,drain lines, misc. reports, and letters for prior approval items. 216 contractor man hours.

Sept. 28- Oct. 4	Time report	- $ 460.00	24	45
	Equip rental	40.00	—	—
	Total this week	$ 500.00		
	Total to date	$6,640.00	328	422

Engineering and inspection was on installing pipe and backfilling pipe lines with sand, construction of the reservoir. 288 contractor man hours.

Oct. 5-11	Time report	- $ 456.44	16	51
	Equip rental	- 33.00		
	Materials lab	- 38.00		
	Rent	- 100.00		
	Telephone	- 38.50		
	Water	- 7.72		
	Office supplies	- 8.42		
	Eltric bill	- 7.92		
	Total this week	$ 710.00	—	—
	Total to date	$7,350.00	334	473

Engineering and inspection was on installing pipe and sand backfilling, also misc. reports and estimates. 219 contractor man hours.

	Costs		Man hours used Engineering	Inspection
Oct. 12-18	Time report -	$ 458.50	20	50
	Equip. rental -	32.50		
	Materials lab. -	9.00	—	—
	Total this week	$ 500.00		
	Total to date	$7,850.00	354	523
	Engineering and inspection was on plumbing, water line, & manhole construction. 136 contractor man hours.			
Oct. 19-25	Time report -	$ 475.49	36	44
	Equip rental	33.00		
	Office supplies -	51.51	—	—
	Total this week	$ 560.00		
	Total to date	$8,410.00	390	567
	Engineering and inspection was on prior approval letters and checking of field reports, laying pipe and placing sand backfill, and electrical work. 138 contractor man hours.			
Oct. 26- Nov. 1,	Time report -	$ 448.50	16	40
	Equip rental -	33.50		
	Materials lab. -	8.00	—	—
	Total this week	$ 490.00		
	Total to date	$8,900.00	406	607
	Engineering and inspection this week was on installing pipe & thrust blocks. 136 contractor man hours.			
Nov. 2-8	Time report -	$ 391.40	28	40
	Equip rental -	21.00		
	Electric bill -	20.27	*—	—
	Total this week	$ 432.67		
	Total to date	$9,332.67	434	647
	Engineering and inspection was on pump house electrical work & manholes. 78 contractor man hours.			
Nov. 9-15	Time report -	$ 147.33	20	16
	Equip rental -	20.00	—	—
	Total this week	$ 167.33		
	Total to date	$9,500.00	454	663
	Engineering and inspection this week was on pump house and electrical work. 26 contractor man hours.			
Nov. 16-22	Time report -	$ 478.00	28	32
	Equip rental -	22.00	—	—
	Total this week	$ 500.00		
	Total to date	$10,000.00	482	695
	Engineering and inspection was on cleaning the reservoir and placing			

	Costs		Man hours used: Engineering	Inspection
Nov. 23-29	Time report	- $ 401.00	12	32
	Equip rental	- 21.00		
	Materials lab	- 28.00		
	Totals this week	$ 450.00		
	Totals to date	$ 10,450.00	494	727
	Engineering and inspection was on ditch backfilling and pressure testing the water lines. 120 contractor man hours.			
Nov. 30- Dec. 6	Time report	- $ 773.50	80	40
	Equip rental	- 34.00		
	Materials lab.	- 10.50	—	—
	Total this week	$ 818.00		
	Total to date	$11,268.00	574	767
Dec. 7-13 XXX	Time report	- $ 565.00	34	56
	Equip rental	- 26.00		
	Materials lab	- 9.00	—	—
	Total this week	$ 600.00		
	Total to date	$11,868.00	608	823
	Engineering and inspection this week was on pressure testing and ditch backfilling & fencing. 120 contractor man hours.			
Dec. 14-20	Time report	- $ 362.00	14	44
	Equip rental	- 25.00	—	—
	Total this week	$ 387.00		
	Total to date	$12,255.00	622	867
	Engineering and inspection was on ditch backfilling. 136 contractor man hours.			
Dec. 21-27	Time report	- $ 120.00	8	24
	Equip rental	- 25.00	—	—
	Total this week	$ 145.00		
	Total to date	$12,400.00	630	891
	Backfilling ditches and wasting unsuitable material. 96 contractor man hours.			
Dec. 28- Jan. 3	Time report	- $ 234.00	8	24
	Equip rental	- 16.00	—	—
	Total this week	$ 250.00		
	Total to date	$12,650.00	638	915
	Engineering and inspection was on pipe backfill and pavement replacement, misc. office work and reports. 32 contractor man hours.			
Jan. 4-10	Time report	- $ 286.00	8	32
	Equip rental	- 14.00	—	—
	Total this week	$ 300.00		
	Total to date	$12,950.00	646	1,000
	Inspector catching up on documentation. No contractor work.			

	Costs		Man hours used: Engineering	Inspection
Jan. 11-17	Time report - $ 531.00		29	53
	Equip rental - 15.00			
	Total this week $ 546.00			
	Total to date	$13,496.00	675	1,000

Engineering and inspection was on plumbing and pressure test on the pumping line 104 contractor man hours.

Jan. 18-24	Time report - $ 600.00		56	40
	Equip rental - 18.00		—	—
	Total this week $ 618.00			
	Total to date	$14,114.00	731	1,040

Contractor did not work this week, inspector catching up on documentation, Engineering was on computation in preparation for chlorination.

Jan. 25-31	Time report - $ 298.00		16	20
	Equip rental - 8.00			
	Materials lab - 30.00		—	—
	Total this week $ 336.00			
	Total to date	$14,450.00	747	1,060

Inspection and engineering was for flushing of pipe lines and chlorination. 21 contractor man hours.

		Costs	Man hours used	
			Engineering	Inspection
2/ 1- 2/7	Time report	$906.19	112	8
	Equip. rental	10.40		
	Total this week	916.59		
	Total to date	$15,271.84	859	1,068
	Engineering on documention. Inspector 8 hours on chlorination and installation of manhole collars. 24 contractor man hours.			
2/ 8- 2/14	Time report	$445.50	63	
	Off. & Utilities	186.94		
	Total This Week	$632.44		
	Total to Date	$15,999.03	922	1,068
	Contractor not working. All time spent on reports and documentation.			
2/15- 2/21	Time Report	$660.29	96	
	Equip. Rental	0.00		
	Total for week	$660.29		
	Total to Date	$16,659.32	1,018	1,068
	Contractor not working. All time spent on reports and documentation.			
2/22- 2/28	Time report	$348.97	32	24
	Equip. Rental	6.45		
	Total this week	$355.42		
	Total to Date	$17,014.74	1,050	1,092
	Inspection on ditch and pipe installation on P.A. #3 as well as general clean up. Office work on reports. 82 contractor man hours.			
3/ 1- 3/7	Time report	$325.63	37	15
	Equip. Rental-	14.75		
	Total this week	$340.38		
	Total to Date	$17,355.10	1,087	1,107
	Contractor painting metal on Pump House, Blade work on ditchline and general clean up. Contractor man hours 16.			
3/ 8- 3/14	Time report	$383.44	42	18
	Equip. Rental	8.00		
	Total this week	$391.44		
	Total to Date	$17,746.56	1,129	1,125
	Completed ditch and pipe installation on P.A. #3 and painting on Pump House. Contractor man hours 25.			
3/15- 3/21	Time report	$373.36	64	
	Total this week	373.36		
	Total to Date	$18,119.92	1,193	1,125
	Contractor not working. Inspector in office on reports and other documentations.			

	Costs	Man Hours Used	
		Engineering	Inspection
3/22/70 to 7/29/70	(Project Completed 3/31/70)		
	$196.00*		
	240.80**		
	Total this period $436.80		
	Total to Date $18,556.72		

* Job reports and inspection for previously rejected water line marker posts, inspection of installation in field.

** 2 days wages for two men preparing this report.

FORM 8.90 900 10-66

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

July 23, 1970

SUBJECT: Cabin Creek Safety Rest Area Project
Contract No. 7280

To: C. T. Keasey
Regional Engineer

ROSEBURG

The final estimate and cost report for the subject project contains the below-listed items in final amounts:

	Original Authorization	Final Estimate
Total contract items	$67,585.50	$62,612.64
Anticipated items:		
Water guages	-	200.00
Flagging	100.00	None
Contingencies	3,045.84	None
Engineering	6,768.84	21,187.36

It is to be noted that the total contract items amount to $62,612.64, with an additional $200 for water guages. The engineering expenditures amounted to $21,187.36, or 33.7 percent of all work exclusive of engineering.

The amount of engineering expended on this project appears to be not only high but exorbitant. It is requested that you submit a detailed report explaining these charges, the number of men utilized on the project, etc. Please explain reasons, if any, for this extreme overrun of engineering costs.

Please reply by August 3.

A. E. Johnson
Assistant State Highway Engineer

AEJ:ms
cc F. D. Morgan

ROSEBURG DIVISION
RECEIVED

Roseburg
February 11, 1970

Engineering costs
Contracts 7280 & 7302

C. T. Keasey
Division Engr.

This is in answer to your letter of Feb. 10th wherein you ask what steps I intend to take to hold further engineering costs to an absolute minimum.

Primarily I will continue to do what I have been doing. Loaning men out to other crews when not needed, keeping an inspector on the jobs only when absolutely necessary for the documentation of the work and materials, and urging the contractor to pursue the work more vigorously.

Our engineering expenditures for our four (4) man crew is $4800./month. This includes salaries, office rent, equipment rental, supplies, etc. In six (6) months time, regardless of how many jobs we might have, if the four of us do not work any overtime our engineering costs will be approximately $28,800.

On the two jobs in question our actual costs for the 6 months (ending Jan. 31, 1969) that the oldest job has been in effect, our expenditures have been approximately $23,200. or $5,600. less than our normal 6 months operating costs. The loaning of men to other crews plus some charges to vacation and sick leave accounts for the difference.

J. R. Hagedorn
Res. Engr.

RECEIVED
JUN 24 1971
FOR FILING

DOUGLAS COUNTY

BOARD OF COMMISSIONERS
STANFORD BUELL · RAY E. DOERNER · AL FLEGEL

COURTHOUSE . . . ROSEBURG, OREGON 97470 TELEPHONE 503/672-3311

June 18, 1971

Oregon State Highway Division
Highway Building
Salem, Oregon 97310

Attention: L. H. Young

Project: Cabin Creek Safety Rest Area, Pacific Hwy., I-5, Douglas Co.

Gentlemen:

The Umpqua Regional Council of Governments sat in regular session on June 16th and reviewed and voted approval of the above described project.

Very truly yours,

J. E. Slattery
Executive Director
Umpqua Regional Council of Governments

JES:rs

cc: June 22, 1971
R. E. Simpson, FHWA
F. B. Klaboe
F. L. Hall
D. H. Moehring
W. H. Tebeau
H. S. Cox
B. L. Gifford
J. C. McCormick
C. T. Keasey

RECEIVED
JUN 23 1971
OFFICE OF
STATE HIGHWAY ENGINEER

NOTE
F. B. KLABO

RECEIVED
JUN 21 1971
PROGRAM & PLANNING
DIVISION

BEN GIFFORD

RECEIVED
NOV - 9 1970

I.5-3(24)145
7280

November 19, 1970

Mr. M. R. Holst
Post Office Box 692
Oakridge, Oregon 97463

Dear Mr. Holst:

Your October 21 letter to Resident Engineer Engedorn concerning contract time on the Cabin Creek Safety Rest Area, Contract No. 7280, has been considered by both our Region and Construction Section and forwarded here for reply.

Your letter elaborates on the earlier reasons you offered for justifying extension of the contract time which were considered by the Highway Commission at its August 18, 1970, meeting. Based on our recommendations, the time extension was declined then.

We note that significant work on other than the chlorination equipment remained to be done at the end of the 60-day contract time allowed. For instance, the four-inch water line was not installed until over a month later. We understand that the need for modification of the pressure tank was not caused by any design change imposed by the State but was necessary to conform to the approved shop drawings.

As for a source of 3/4-inch rock, the choice of sources for this material was entirely at the contractor's option. The chlorination work which you mention was apparently done on three days between January 26 and February 3 during the three-month winter no-time-count period, so days were not charged during this interval.

After careful consideration of your request and review of the project records, we still cannot find a proper basis to recommend extension of time.

Very truly yours,

R. L. Porter
State Highway Engineer

By

A. E. Johnson
Assistant State Highway Engineer

cc R. L. Porter
Tom Edwards
F. D. Morgan
C. T. Keasey

JAB:fw ms

FORM E-30 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

November 12, 1970

SUBJECT: Cabin Creek Safety Rest Area
Contract No. 7280
Second Request for Time Extension

To:

Mr. A. E. Johnson
Assistant State Highway Engineer
BUILDING

M. R. Holst has submitted the attached October 21 letter and attachments requesting reconsideration of his request for 69 days time extension on this project. The first request was submitted to you in August and considered by the Highway Commission at its August 18 meeting at which time they concurred in the recommendation to decline the extension.

This new material from Mr. Holst just elaborates on the earlier reasons which could be summarized as difficulty in obtaining the automatic chlorination metering equipment, and added orders. The contractor now presents some good documentation of the time required to obtain the chlorination equipment and also shows that it was ordered promptly early in the contract time. If this were the only item that delayed completion, or even a significant part of the work done after the contract time expired, we would recommend some extension because of it. The facts just do not substantiate this.

The 60 days allowed on the contract expired September 23, 1969. We note that all of the 4-inch water line pipe, which was a major item on the contract, was not installed until October28, 1969, over a month later. The contractor has been given the benefit of shutdown time over Labor Day weekend, the three month no-count winter dormant period, and another 30-day stop work order in March, 1970 awaiting final cleanup.

Although there were 6 Price Agreements during the life of the project, they total to only $1,542. Bid items actually underran slightly so that the overall work done by the contractor overran the contract amount by only $202. We still cannot recommend extension of the contract time. Both the Resident Engineer and the Region again recommend against it.

NOTED
A. E. JOHNSON

Since the contractor did not submit the usual request forms, and the information offered in his letter is really only elaboration on the earlier material, which was sent to the Highway Commission, we qu estion whether this needs to go to the Commission for their formal consideration. We suggest that reply be made to Mr. Holst's letter and offer the attached rough draft for this purpose.

F. D. Morgan
Construction Engineer

By

John A. Bond
Construction Administration Engineer

JAB:fw
Enc.
cc V. L. Gallagher

PS: The project stands with 69 days liquidated damages at $75 per day, amounting to $5,175.

RECEIVED
NOV 17 1970
OFFICE OF
STATE HIGHWAY ENGINEER

M. R. Holst Construction
Phone 782-2811
P. O. BOX 692 • OAKRIDGE, OREGON 97463

October 21, 1970

J. R. Hagedorn,
Resident Bridge Engineer.
Oregon State Highway Department
P. O. Box 1128
Roseburg, Oregon

Re: Contract 7289 Cabin Creek
Safety Rest Area.

Dear Mr. Hagedorn:

Please refer to our letter of April 1, 1970 requesting 69 additional work days in excess of the number specified in the contract. On August 25th we received a letter from the Oregon State Highway Commission denying our request. We believe our letter may not have fully explained our problem at Cabin Creek and will try again to shww why we could not complete this project in 60 days.

We have tryed to show in our letter of April 1, 1970 that it takes many days to do all the paper work required to procure materials and manny more days to manufacture this customized equipment. Therefore, we have asked Wallace Tiernan the supplier for the Automatic Chlorination Metering equipment to document our correspondence with them and show the reason the project could not proceed on schedule.

The calendar count on this project began July 23, 1969 completion date being September 23, 1969. The factory in Belleville, New Jersey released this equipment September 19, 1969 to Pacific Intermountain Express. It took 2 more weeks to arrive in Roseburg. Arrived October 3, 1969.

This was not the only specialized equipment used at Cabin Creek. Manny customized valves were needed. Such as valves to be placed in the bottom of the redwood tank.

There were several price agreements negotiated when we were already working on excess days. We feel we should have been allowed extra time for extra work done.

Changes in design was made on the pressure tank after it had been installed. It was removed and returned to Los Angeles. This was done November 12, 1969. It was returned to us the first part of December.

The State did not have an available source of 3/4 " rock for the road. We waited 2 weeks for pit approval.

It took 8 days to chlorinate the lines to the Engineers satisfaction. We feel this should have been done on down time.

It was a great expense to us that we could not proceed on any proposed schedule because we were waiting for materials. When they did arrive we were working in exceptionally wet winter weather. Instead of the summer months we had bid the work for.

We hope this letter along with our letter of April 1st will clarify our postion in this request.

We are forwarding to you a letter ofrom Wallace Tiernan and dwg. no. 29409-2.

Very respectfully yours,

M. R. Holst

M. R. Holst.

WALLACE & TIERNAN DIVISION
MEASUREMENT & CONTROL
112 N.E. HOLLADAY ST., PORTLAND, OREGON 97232 • (503) 236-1200

PENNWALT CORPORATION

September 16, 1970

M. R. Holst, Construction
P. O. Box 692
Oakridge, Oregon 97463

Job: Oregon State Hiway Department
Contract Number 7280
Cabin Creek Safety Rest Area
Douglas County, Oregon

Dear Gentlemen:

The following is information gathered in this Portland office to reconstruct the happenings on the equipment ordering for this State of Oregon Job:

1. Job Specification Pages 51, 52, and 53. Chlorination Installation. Drawing Number 24683.

2. Wallace & Tiernan Div. quotation dated July 8, 1969, which included 30 day shipment after receipt of purchase order and acknowledgement from the factory.

3. Your note received via mail dated July 25, 1969, requesting Wallace & Tiernan to proceed on this order.

4. Our letter dated July 29th requesting further purchasing information such as bonding company and bond number, Agent.

5. Your letter dated July 31, provided all pertinent data to proceed.

6. Order processed and forwarded to factory on August 1, 1969. Order processing in the Portland office included full performance details on the furnishing of the 2" Disc Meter - Proper gear selection, range of flows - gallons per minute, hydraulic data. Please note that each Automatic Chlorination Metering Facility is customized to fit the job conditions. See enclosed dimension sheet and Change Gear Selection Chart, Dwg. No. 29409-2.

PENNWALT CORPORATION

WALLACE & TIERNAN DIVISION
MEASUREMENT & CONTROL
112 N.E. HOLLADAY ST., PORTLAND, OREGON 97232 · (503) 236-1200

7. Wallace & Tiernan factory acknowledged order via Post Card, dated August 8 - sample card attached. The 30 day shipping schedule starts from the date of this acknowledgement.

8. The factory schedule shipping date was August 29, 1969.

9. Wallace & Tiernan Customer Service Department sent Production Delay Report on September 4, 1969, indicating rescheduled date.

10. Factory assembly - processing problem rescheduled shipment for September 19, 1969. The scheduled day was met with the equipment being released to Pacific Intermountain Express Surface Transportation to Oakridge, Oregon from our factory location in Belleville, New Jersey.

11. Factory Invoice date to you September 25, 1969.

12. In December extra copies of Equipment Instruction Manuals forwarded to you to meet the job specifications.

13. Wallace & Tiernan Representative performed start-up service on February 3, 1970, in the presence of State Installation - Operation Personnel.

May we offer the following comment, learned from past experience in furnishing customized equipment, such as is involved with Chlorination Facilities. Factory assembly of equipment, the Wallace & Tiernan organization manufactures, is often subject to factory delays simply because each piece of apparatus is customized to meet job requirements, hydraulics, chemicals being metered. With this type of equipment there is no such thing as having "On the shelf" for immediate shipment. We trust that this information will be helpful to you.

Very Truly Yours

WALLACE & TIERNAN DIV.
PENNWALT CORPORATION

Carl E. Carlson
Sales Manager - Portland Office

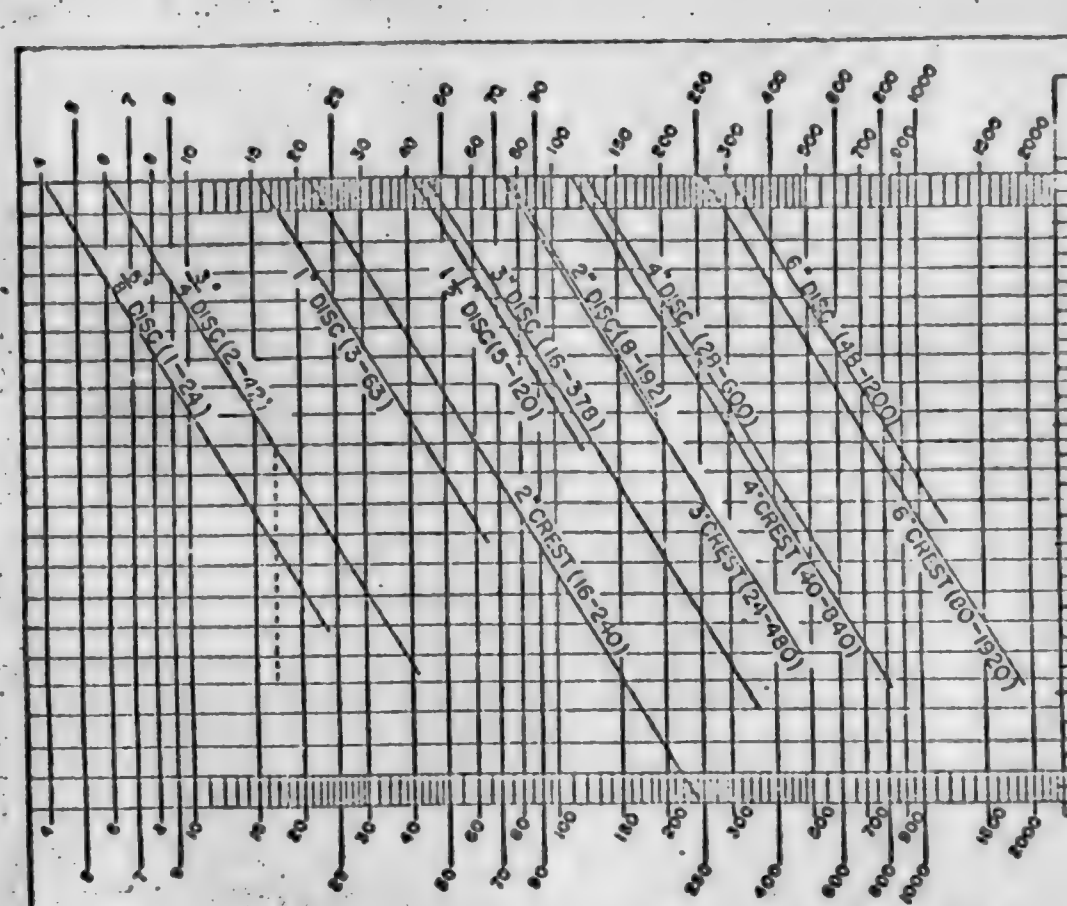
CEC:pah

CHANGE GEAR SELECTION CHART

U-13896 EXTENSION CASE ON NEPTUNE TRIDENT METERS
For Automatic Water Operated Diaphragm Pumps

25 MAIN ST., BELLEVILLE 9, N. J.

REV. 1-61
DWG. NO. 29409-2
REDRAWN 5-57

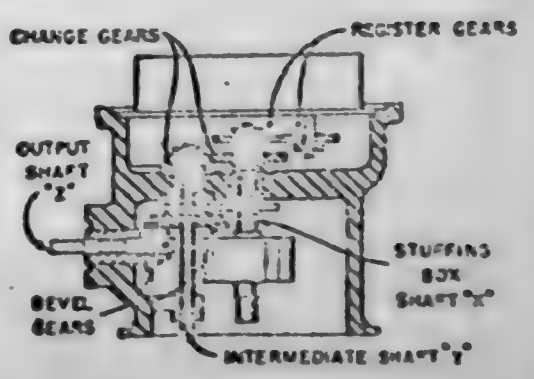


CHANGE GEARS		
STUFFING BOX SHAFT "X"	INTERMEDIATE SHAFT "Y"	BEVEL GEARS
MG14-043	MG14-024	LARGE GEAR ON INTERMEDIATE SHAFT "Y" DRIVES SMALL GEAR ON OUTPUT SHAFT "Z"
MG14-045	MG14-026	
MG14-044	MG14-028	
MG14-042	MG14-030	
MG14-040	MG14-032	
MG14-038	MG14-034	
MG14-036	MG14-036	
MG14-034	MG14-038	
MG14-032	MG14-040	
MG14-030	MG14-042	
MG14-028	MG14-044	
MG14-026	MG14-046	
MG14-024	MG14-048	
MG14-046	MG14-026	SMALL GEAR ON "Y" DRIVES LARGE GEAR ON "Z"
MG14-044	MG14-028	
MG14-042	MG14-030	
MG14-040	MG14-032	
MG14-038	MG14-034	
MG14-036	MG14-036	
MG14-034	MG14-038	
MG14-032	MG14-040	
MG14-030	MG14-042	

PROBLEM — WITH WATER METER SELECTED ON BASIS OF CAPACITY, TO SELECT GEARING WHICH, AT MAXIMUM FLOW TO BE TREATED, WILL OPERATE DIAPHRAGM PUMP AT 12 STROKES PER MINUTE.

EXAMPLE — 3/4" DISC METER, MAXIMUM FLOW TO BE TREATED 17 G.P.M.

SOLUTION — FROM INTERSECTION OF 17 G.P.M. FLOW LINE WITH 3/4" DISC METER LINE, GO RIGHT ON NEAREST HORIZONTAL LINE AND SELECT CHANGE GEARS MG14-030 & MG14-042 WITH LARGE BEVEL GEAR ON INTERMEDIATE SHAFT "Y" DRIVING SMALL BEVEL GEAR ON OUTPUT SHAFT "Z".



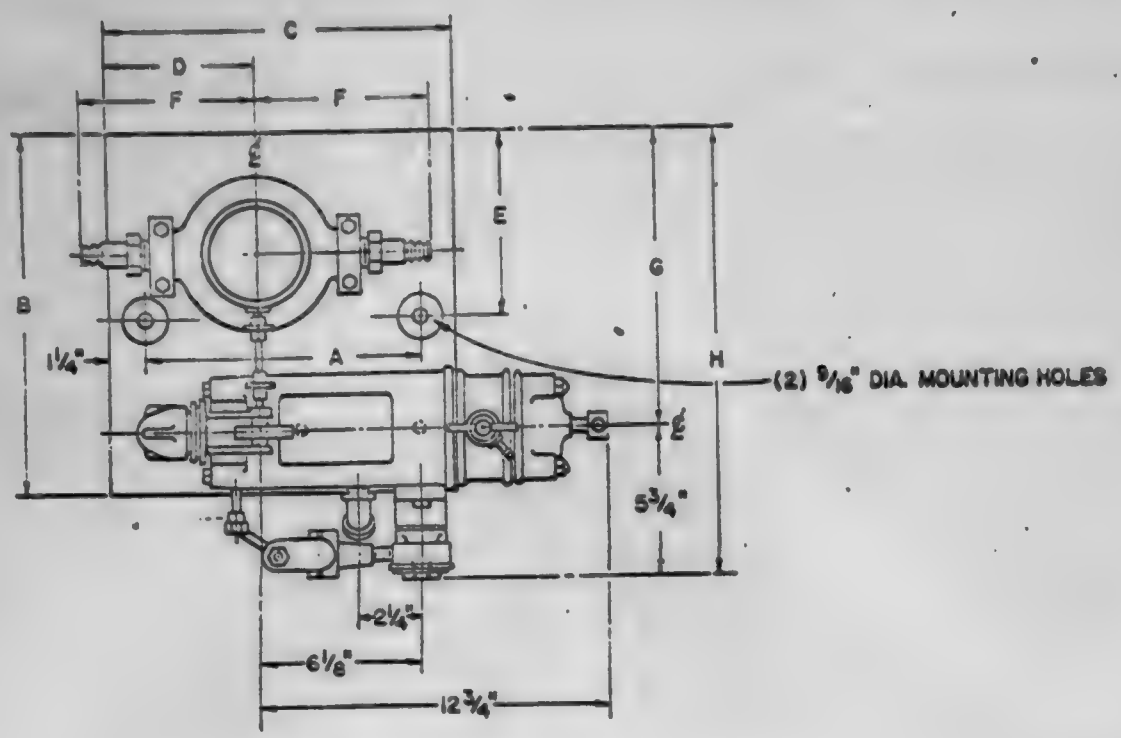
WHEN ORDERING MATERIAL ALWAYS SPECIFY SERIAL NUMBER OF APPARATUS.

SERIES A-429 AUTOMATIC HYPOCHLORINATOR

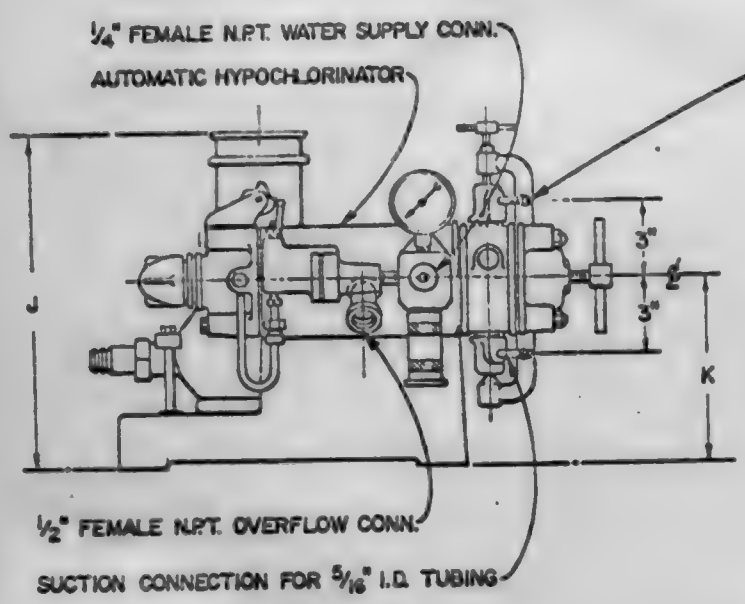
With Disc Type Water Meter

DIMENSIONS

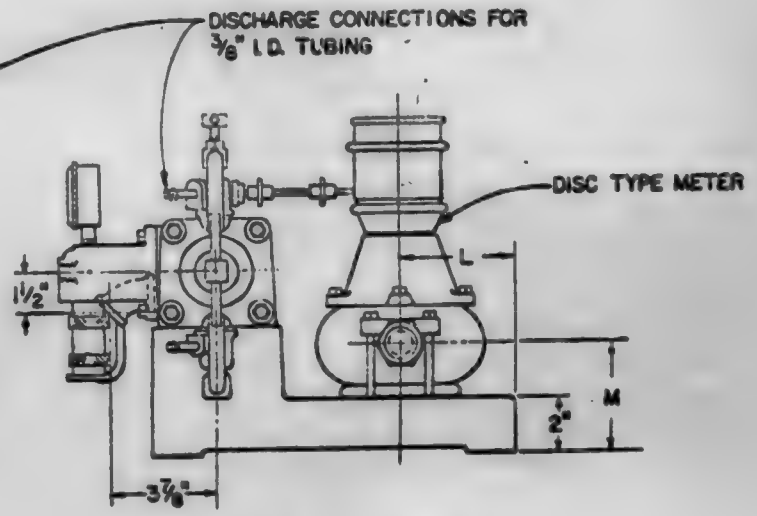
170.210



PLAN



FRONT ELEVATION



SIDE ELEVATION

METER SIZE	METER CONNECTIONS	A	B	C	D	E	F	G	H	J	K	L	M
5/8"	¾" M. N.P.T.	10	13	12½	5¼	6½	6¼	10 11/16	16 7/16	12¾	6⅞	4½	3
¾"	¾" M. N.P.T.	10	13	12½	5¼	6½	7⅛	10 11/16	16 7/16	13⅛	6⅞	4⅛	3 3/16
1"	1" M. N.P.T.	10	13	12½	5¼	6½	8⅛	10 11/16	16 7/16	13¾	6⅞	4⅛	3 5/8
1½"	1½" FEM. N.P.T.	12	18½	14½	7¼	10 15/16	6 5/16	16 ⅛	21⅞	15⅝	10 3/16	6⅝	4⅜
2"	2" FEM. N.P.T.	12	18½	14½	7¼	10 15/16	7⅝	16 ⅛	21⅞	15¾	10 3/16	6⅝	5¼

ALL DIMENSIONS ARE IN INCHES

INDUSTRIAL PRODUCTS DIVISION / 25 MAIN ST., BELLEVILLE, N.J. 07109

COPYRIGHT 1967, WALLACE & TIERNAN INC.

CAT. NO. 170.210.
REVISED 11-67

RECEIVED
OCT 20 1970
D

STATE COPY

FOR FILING OSHD (Johnson)
Region Walla Walla

I-5-3(84)145

10-9-70 mh

FORM PR-33.E (REV. 3-68)

FINAL ACCEPTANCE REPORT

(PPM 20-6.1)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

REGION NO.	REPORT NO.	COUNTY	DIVISION
6	5	Douglas	Oregon

DATE OF REPORT	REPORT MADE BY	PROJECT NO.
10-8-70	P. V. Riedl, Area Engr	I-5-3(84)145

COMPLETION DATE	ACCEPTANCE DATE BY CONTRACTING AGENCY	TIME ELAPSED	CONTRACT TIME
3-31-70	7-23-70	215 %	100

APPROVED EXTENSIONS: None

LOCATION: Cabin Creek Rest Area about 34 miles south of Cottage Grove & 18 miles North of Roseburg on Pacific Highway.

*The PR-47, Statement of Materials and Labor Used by Contractors on Highway Construction Involving Federal Funds, has been submitted.

*A copy of the State's materials certificate is attached to the Division office copy of this report.

Compliance reviews made indicate that all applicable contract requirements relative to wage rates, payroll submissions, and labor provisions have been met.

There is compliance with section 1.23 of the Regulations pertaining to encroachment on the right-of-way.

NOTED
A. E. JOHNSON

REMARKS: *The project has been completed in reasonable close conformity with the approved plans and specifications, including authorized changes and extra work.*

CABIN CREEK SAFETY REST AREA
PACIFIC HIGHWAY
Water System and Access Road

The work to be completed under this project consists of the construction of an access road and connecting the two wells, drilled under Project I-5-3(80)145, to the existing water system and provide storage for the rest area. The water supply system installation consists of approximately 13,500 feet of water line, two well pumps, pump control house, a 50,000 gallon reservoir, and a water meter paced chlorination unit (South Bound Unit) to handle the two new wells.

The project was completed on March 31, 1970 and the contract time charge was 129 days. The allowable contract time was 60 days, thus, 69 days of liquidated damages has been assessed for a total of $5175.

The final contract amount was $66,145.82 which is a 2% underrun. There were no major overruns or underruns on the project. Information on the overruns and underruns are on file in the Division office.

10-21-70 Copy to Construction

NOTED
TOM EDWARDS

RECEIVED
OCT 20 1970
OFFICE OF
STATE HIGHWAY ENGINEER

* NOTE: Not applicable for direct federal projects.

ACCEPTANCE OF PROJECT IS RECOMMENDED		ACCEPTED BY BUREAU OF PUBLIC ROADS	
SIGNATURE: Original signed by P. V. RIEDL		SIGNATURE: Original Signed by R. E. Simpson	
TITLE: P. V. Riedl, Area Engr	DATE: 10-9-70	TITLE: R. E. Simpson, Division Engineer	DATE: 10-13-70

REPLACES PR 33A(2) REV. 4-66 WHICH MAY BE USED UNTIL SUPPLY IS EXHAUSTED.

RECEIVED
SEP 28 1970
FOR FILING

I-5-3(84)145
7240

#5

August 25, 1970

M. R. Holst Construction
P. O. Box 692
Oakridge, Oregon 97463

Gentlemen:

The State Highway Commission at its meeting on August 18 considered your request for a 69-day extension of time on Contract No. 7280 for a water system and access road in Cabin Creek Safety Rest Area on the Pacific Highway in Douglas County.

Careful consideration was given to the reasons you submitted. However, in light of the available facts and the provisions of the contract, the Commission denied your request.

If there are pertinent facts which have not yet been considered, you should contact the Resident Engineer, the Division Engineer, or the Construction Engineer in the Salem office.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

By
C. W. Reed, Assistant Secretary

fkn
cc F. D. Morgan
V. E. Skoog
C. T. Keasey
John Hagedorn
Bureau of Public Roads

FORM S-30 REV 3-68 40067

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Roseburg, Oregon
July 10, 1970

To: C. T. Keasey
Division Engineer
Roseburg, Oregon

SUBJECT: Contractors request for increase in workdays
Cabin Creek Safety Rest Area
Pacific Highway
Douglas County
Contract No. 7280

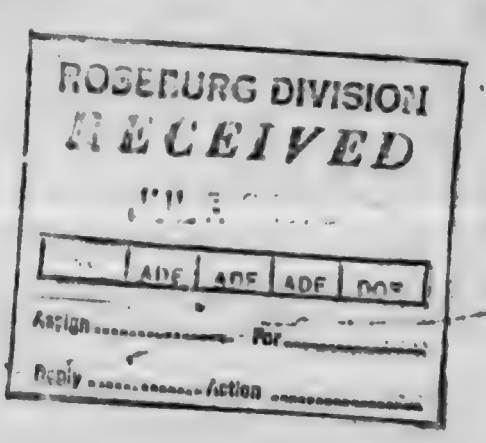
Herewith attached are five (5) copies of the contractors request for increase in workdays, together with his letter of explanation and other documents.

It appears from the contractors letter that he considers that the primary cause of the calendar workday overrun was his inability to secure materials. I believe that this circumstance did delay his work some what, but the fact that the contractor averaged less than 3 men per day on the project is, in my opinion the single, greatest, factor in the amount of time used for completion of the work.

To aid in the study of this request please note the attached graph. Also attached is a copy of the contractors letter on which I have numbered the paragraphs.

Contractors Paragraph 2 & 3:

Contractor implies that he waited for approval before ordering equipment. In most cases he installed equipment even before submitting his request. The contractor was continually reminded of the necessity for obtaining written prior approval for various pieces of equipment or materials. The requirement to obtain written prior approval is written into the special provisions. Letters, together with excerpts of the pertinent special provisions, were sent to the contractor on two different occasions, the first just one day before the contract time expired and the other about three weeks later, urging him to comply to the above. This is not a valid reason for running overtime.



Contractors Paragraph 5:
The length of time required to obtain the hypochlorinator is inconsecuential in regard to the project running over in time. This item arrived on the project October 17, 1969, and was not put into use until February 3, 1970. Approximately 20% of the contract work was performed between these dates. The project was only 70% completed by October 17, 1969.

Contractors Paragraph 6:
I am uncertain as to what the contractor means by the "4 extra", but possibly he means the work done under price agreements.

P.A. #1, Furnish & install two hose bibbs in the pump house was probably a half hours work & which was done in the normal course of planned plumbing work.

P.A. #2, Furnish & install anti-climbing device was fabricated by the manufacturer & caused no delay to the contractor.

P.A. #3,4 & 5, all the work done under these price agreements was performed during the period December 1st to March 1st or later, in which there are no calendar workday charges. In as much as there was only 1 workday charges after December 1st, it is obvious that this price agreement work had no bearing on the time.

The wire referred to is thesubmersible cables. The contractor installed #10 wire when specs called for #4 wire. He finally procured #4 wire, after considerable procrastination, and supplied a length for testing purposes. The test results were made known to him in about two weeks, a reasonable time.

Contractors Paragraph 7:
Contractor was informed on September 23, 1969 that the hydropneumatic tank was non-spec and again on October 15, 1969 when he installed the tank. On November 12, 1969 the tank was removed and sent back to the manufacturer for revision. The "changes" the contractor mentions were to change the tank to conform to shop drawings submitted by the supplier and approved by the state. Contractor states that the revised tank was returned the first part of December 1969. It was not installed until January 14, 1970. During the period November 12, 1969 to January 14, 1970, over two months, the contractor utilized a small temporary pressure tank for any pumping, testing, etc., that he may have done. If the "changes" in the tank caused the contractor any delay it was his own doing.

Contractors Paragraph 8:
We checked several sources of 3/4-0 rock for the contractor. We found suitable material 8/15/69 at a commercial source at Winchester. This was stockpiled material. When the contractor was ready to use the material (early in November 1969), the rock had been all used up, making the contractor wait until more was crushed. As of November 17, 1969, 20% of the work remained to complete the project, and no subsequent work was dependent on the 3/4-0 rock. I cannot ascertain any delay for this reason.

Contractors Paragraph 9:
Price Agreement 3 & 4 were performed during a period when no calender days were assessed.

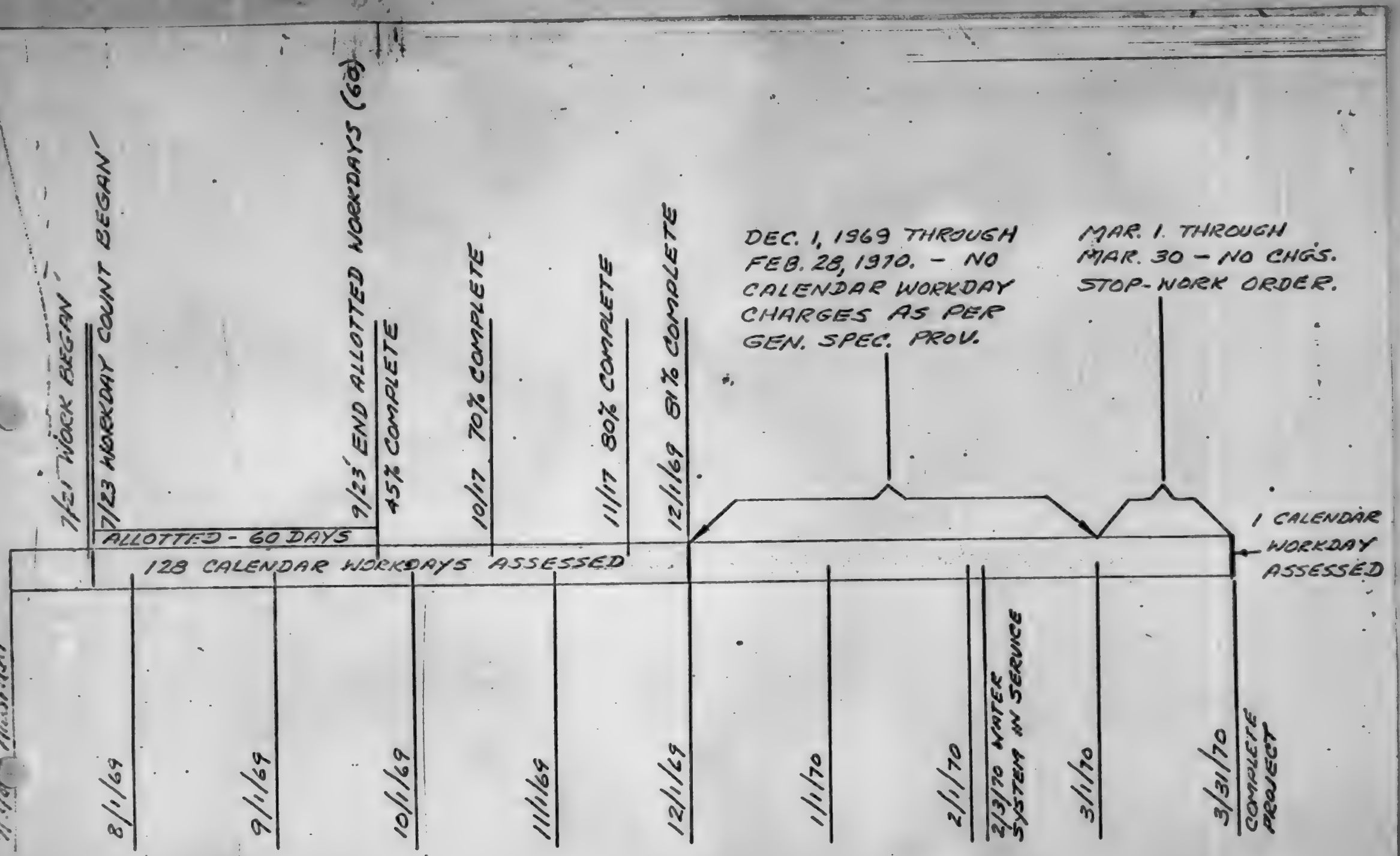
Contractors Paragraph 10:
This has been refuted in answers to paragraphs 6 & 9.

In summation, the reasons for delay as set forth by the contractor are not covered as "..... Causes beyond the control of the contractor....." as outlined under Article 8-8, Adjustment of Contract Time, General Special Provisions. This article also states that causes beyond the contractors control are not necessarily limited to the four (4) that are out lined.

If the procurement of materials, vigorously pursued by the contractor, was the only reason for running overtime, I would be inclined to recommend some consideration. In this case I believe that while some materials may have been difficult to acquire, the delay from this circumstance was relatively minor.

I recommend against honoring this increase in workdays request.

J. R. Hagedorn
Resident Engineer



CABIN CREEK SAFETY REST AREA
Cont. # 7280

M. R. Holst Construction
Phone 782-2811
P. O. BOX 692 • OAKRIDGE, OREGON 97463

April 1, 1970

J. R. Hagedorn, Resident Bridge Engineer.
Oregon State Highway Department
Roseburg, Oregon

RE: Contract 7280 Cabin Creek
Safety Rest Area.

Dear Mr. Hagedorn:

We would like to ask for an increase of 69 work days for the following reasons:

The securing of brochures, having them approved by your office and returned to the Supplier with a Purchase Order can run into quite a number of Calendar Days Charge against the job. On a short Contract such as Cabin Creek this can cut down on the working days considerably.

Rest Areas where toilet buildings, sun shelters and other facilities are required work can proceed immediately but on this type of project, a water system, nothing can be done the 2 or three weeks it takes to gain approvals.. Nothing can be done until the materials are on the job site.

We would also like to point out that much of the materials used at Cabin Creek were precision instruments and takes quite some time to procure.

After the Supplier was given a Purchase Order he than orders from the manufacturer. In some cases on the East Coast. Our order was than filled when its turn came and in some cases not for a monthafter it was ordered. Please note a Speed Memo from Wallace Tiernan Inc. dated September 4, 1969. On September 25th I called Newark, N.J. to see if the hypochlorinator had been shipped as promised. This item took longer to get than the duration of the Contract.

We are forwarding a note from our Job Superintendent some of this is materials used on the 4 extras to the Contract. The wire in the first item is burial wire.

Changes in the pressure tank made it necessary for the tank to be returned to Los Angeles. This was done on November 12, 1969. It was returned to us the first part of December.

It was impossible to find 3/4 inch rock to meet Oregon State approval until November 7th. This was than processed and place November 17th.

Material under price Agreement #3 was not received until December 23rd. Additional material under Price Agreement #4 was not received until approximately February 1, 1970

Due to the unfor-seeable changes necessary to make this system work and the many additions we had, we feel were a contributing factor to the extra time needed to complete this project.

We ask your indulgence,

Very respectfully yours,

M R Holst

M. R. Holst.

inc: Speed Memo from Wallace & Tiernan Inc.
Date memo by George Marquart, Job Superintendent.

M R Holst

WALLACE & TIERNAN INC.
INDUSTRIAL PRODUCTS DIVISION/25 MAIN ST., BELLEVILLE, N.J. 07109
TEL 201:759-8000/TWX 201:759-3985/CABLE: WALTIERNAN NEWARK/TELEX 138413

SPEED MEMO

REPLY TO → BOX 178
NEWARK, N.J. 07101

TO M. R. Holst, Construction
P. O. Box 692
Oakridge, Oregon 97463
Attn: Purchasing Dept.

FROM:

SUBJECT: Oregon State Highway Dept. Cabin Creek Safety Rest Area , Oakland

Your order: Letter from above, dated 7/31/69
Our order: 1389-81243A

DATE	MESSAGE
9/4/69	

Due to an unforeseen delay in manufacture we regret that it will be necessary to delay shipment of the above order until 9/19.

M. R. Holst Construction
Construction Shop
Rock Road
Oakridge, Oregon

Laura H. Barker, Manager
Customer Services
Wallace & Tiernan Div.
Pennwalt Corp.

LHB:rbc

SIGNED

DATE	REPLY
9-9-69	

Dear Miss Barker,

May we ask that you give our order every consideration as the Contract completion date is September 23, 1969. We also would appreciate it if you would air freight this equipment to Mahlen Sweet Airport, Eugene, Oregon and call our office on its arrival. M. R. Holst Construction tele 782 2811

SIGNED G. H. Holst

We're using this Speed Memo to save time—yours and ours. It's a quick informal way of communicating... cuts down paperwork. If you have to write to us on this subject, please reply on pink copy and retain white copy.

RECIPIENT COPY

FORM 3094 REV. 6/67

RECEIVED
AUG 13 1970
FOR FILING

I-5-3(24)145
7280

August 11, 1970

Oregon State Highway Commission

Request for Extension of Time
No. 5
August 18, 1970 meeting

Gentlemen:

M. E. Holst, contractor on the Cabin Creek Safety Rest Area water system project on the Pacific Highway (I-5) in Douglas County, Contract No. 7280, has requested a 69-day extension of contract time. The contractor cites delay in delivery of some of the materials or equipment incorporated in the project, plus alleged changes in a pressure tank, and additional work added by a Price Agreement.

From the information available, we cannot confirm an exceptional delay in acquiring components for the water system. Poor progress was made on work primarily under the contractor's control. The alleged change in a metal pressure tank was not one imposed by the State. The supplier apparently deviated from the approved shop drawings and had to make corrections. The work added by Price Agreement in question was performed during the winter dormant period when, in accordance with the specifications, time was not being counted against the contractor. Therefore, no extension on these reasons is justified.

The project was completed March 31, 1970, with 69 days liquidated damages accrued at the rate of $75 per day for a total of $5,175. I recommend that the request for extension be denied.

This matter will be on the agenda for your consideration at the August 18 meeting.

Very truly yours,

R. L. Porter
State Highway Engineer

cc Floyd Query
Tom Edwards
A. E. Johnson
Victor D. Wolfe
F. D. Morgan
V. E. Skoog
C. T. Kegley

JAB:fw

OREGON STATE HIGHWAY COMMISSION

RECEIVED JUL 30 1969

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7280 Contractor M. R. Holst

Highway Pacific

Section Cabin Creek Safety Rest Area

Kind of Work Water system and access road

It is recommended that the request for increase in the number of workdays within which to complete said contract be DENIED ~~or GRANTED~~. The reasons for such recommendation are as follows:

Recommend request be denied.

Recommended for Approval:

John Claussen
Division Engineer

Construction Engineer or Bridge Engineer

for A E Johnson
Assistant State Highway Engineer

Contract No. 7280

Project designation I-5-3(84)145 State-Federal

Date awarded July 3, 1969

Work started Jluy 21, 1969

Per cent completed 100 3/31/70 Date

No. of Workdays Allowed 60

No. of Workdays Used 129

No. of Added Workdays Requested 69

M-880 (Rev.)—03K—9-64

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon 97310

Date APRIL 1, 19 70

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 60 days to 129 days, within which to complete our Contract No. 7280, without the assessment of liquidated damages. The said contract is described as follows:

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

SEE LETTER ATTACHED

Respectfully submitted,

M. R. HOLST
Contractor

By M. R. Holst
M. R. HOLST, OWNER

CONSENT OF SURETY

Date APRIL 1, 19 70

We, AETNA CASUALTY & SURETY COMPANY, as

surety on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

Stanley P. Duyck
STANLEY P. DUYCK, Attorney-in-fact

(SEAL)

Stanley P. Duyck
STANLEY P. DUYCK, Resident Agent

FORM E-50 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon 97310

August 4, 1970

SUBJECT: Cabin Creek Safety Rest Area
Contract No. 7280
Request for Time Extension

To:

Mr. A. E. Johnson
Assistant State Highway Engineer
B U I L D I N G

M. R. Holst requests a 69-calendar-workday extension of the contract time on the subject project because of delay in securing some of the contract materials and equipment, alleged changes in the pressure tank for the water system, and work added by Price Agreement No. 3.

This project covered the installation of two pumps in existing wells, the installation of some 12,000 feet of four-inch water main, construction of a 50,000 gallon redwood reservoir, and the related work to supplement the water supply in both the north and southbound units of this rest area. Sixty (60) calendar workdays were allowed. The day count started July 23, 1969 and the 60 days had elapsed September 23 with only 45 percent of the work completed. The project was actually completed March 31, 1970 and after allowing for the three-month winter dormant "no count" period and an additional ordered stop work interval, there are 69 days of liquidated damages at $75 per day for a total of $5,175.

Perhaps the 60 days allowed was on the low side for work of this nature because some of the material items do require lead time to secure. We note for instance that the materials for the redwood reservoir arrived at the job site September 29 or 6 days after the contract time had expired. The contractor does not offer any factual documentation of the time required for materials procurement. In the past where this has been offered as a reason for extension, we have insisted on copies of purchase orders, invoices, shipping instructions and so forth to clearly establish the time required. The contractor may ultimately be able to produce such evidence in this case, but from what we have now, I recommend against the extension by reason of materials availability.

The alleged change in a metal pressure tank was in reality a failure to supply a tank in accordance with the approved shop drawings. There was no change imposed by the State.

Price Agreement No. 3 was in the amount of $720 and covered some additional plumbing to interconnect to the north and southbound water systems. This Price Agreement was dated November 21, 1969 and the work was performed during the winter "no count" period, so no liquidated damages accrued because of it and no extension is justified on that reason.

As you know, there was a heavy overrun in the engineering charges on this project. The overrun in time contributed significantly to this. When the 60 days allowed had expired, the engineering authorization was 92 percent spent. The main purpose of liquidated damages is to offset extra engineering costs.

The Resident Engineer and Regional Engineer both recommend against extension and we concur. This was an Interstate project, but a recommendation against extension does not require Bureau of Public Roads' concurrence. A rough draft letter to the Highway Commission on the above basis is attached.

F. D. Morgan
Construction Engineer

By John A. Bond

John A. Bond
Construction Administration Engineer

JAB:fw
Attach.
cc V. L. Gallagher

RECEIVED
AUG 5 1970
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUL 23 1970
FOR FILING

I-5-3(84)145
7240

July 23, 1970

Oregon State Highway Commission

Gentlemen:

Work was completed March 31, 1970, on Contract No. 7280. The contract was with H. R. Holst Construction Company and was for a water system and access road on the Cabin Creek Safety Rest Area Section on the Pacific Highway in Douglas County.

As the contractor has completed all work according to specifications, I recommend that you accept the project effective July 23, 1970, and that you concur in this procedure at the Commission meeting on August 18.

It is assumed that if you have no objections to this action and you do not advise me to the contrary, I may consider the matter has your approval.

Very truly yours,

R. L. Porter
State Highway Engineer

cc: Floyd Query
Tom Edwards
A. E. Johnson
I. D. Merchant
V. D. Wolfe
F. D. Morgan
L. H. Young
V. E. Skoog
C. T. Keasey

ms sr

RECEIVED
JUL 23 1970

I-5-3(84)145
7280

July 23, 1970

The Aetna Casualty & Surety Co.
Bond Department
1201 S. W. 12th Avenue
Portland, Oregon 97205

Gentlemen:

Contract No. 7280 awarded to M. R. Hoist Construction for a water system and access road in the Cabin Creek Safety Rest Area of the Pacific Highway in Douglas County was completed on March 31, 1970, and accepted by the Highway Commission on July 23, 1970.

Final payment in the amount of $3,379.28 will be released to the contractor after July 30, 1970. The total contract amount is $62,612.64 including $98.90 for work performed under force account.

No claims for labor or material have been filed with us.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

sss

cc M. R. Hoist Construction
P. O. Box 692
Oakridge, Oregon 97463

Ward Insurance Agency
149 - 12th Avenue, W.
Eugene, Oregon 97401

bcc Frank Morgan
Ivan Merchant
V. E. Skoog
Attn: John Herr
C. T. Keasey

I-5-3(84)145
7280

FORM E-1 (REV 12-66)

OREGON STATE HIGHWAY DEPARTMENT

FIELD ENGINEER'S WEEKLY REPORT

FOR CONSTRUCTION PROJECTS ONLY
CONSTRUCTION AND BRIDGE DIVISIONS

	SECTION: Cabin Creek Safety Rest Area	WEEK ENDING: May 22, 1970
		SECTION PREFIX: 610-1030
	HIGHWAY: Pacific	COUNTY: Douglas
NAME OF JOB: Cabin Creek Safety Rest Area	KIND OF WORK: Water System and Access Road	
CONTRACTOR: M. R. Holst Construction	CONTRACT NUMBER: 7280	FEDERAL AID PROJECT NUMBER: I-5-3(84)145
DATE OF CONTRACT: July 3, 1969	DATE WORK STARTED: July 21, 1969	ESTIMATED COMPLETION DATE: March 31, 1970
AVERAGE FORCE ON PROJECT FOR THE WEEK. MEN: 0 SUPERVISION: 0	SPECIFIED WORK DAYS	WORK DAYS USED
	SPECIFIED CALENDAR DAYS 60	CALENDAR DAYS USED 129
	SPECIFIED COMPLETION DATE	PERCENT OF TIME ELAPSED 213
PROJECT AUTHORIZATION: $77,449.85		PERCENT OF CONTRACT COMPLETED BASED ON ESTIMATED COST 100
EXCLUSIVE OF ENGINEERING: $70,731.34	ENGINEERING AUTHORIZATION $6,768.55	
ESTIMATED COST OF COMPLETED PROJECT, EXCLUSIVE OF ENGINEERING: $62,556.19	ENGINEERING COST TO DATE $18,256.62	PERCENT OF CONTRACT COMPLETED BASED ON TOTAL AUTHORIZATION 100
ESTIMATED PERCENT: OVERRUN / UNDERRUN 11 %	PERCENT OF AUTHORIZATION 270%	DATE PROJECT WAS COMPLETED: March 31, 1970

ESTIMATED PERCENT COMPLETE (ROADWORK)

CLEARING	DRAINAGE	GRADING	BASE	OIL AND/OR PAVE.	MAT'L. PROD.		
		100%	Access	Road	WaterMain	PumpInstal	Embank

	GRADING	SURFACING	MAINTENANCE MATERIALS	OIL & BITUMINOUS MACADAM	PAVING
MILES IN PROJECT	0.18	0.18			
MILES PARTIALLY COMPLETED					
MILES COMPLETED	100%	100%			
TOTAL ESTIMATED QUANTITIES (CONTRACT)		460 C.Y.	12,725L.F.	100%	550 C.Y.
TOTAL QUANTITIES CORRECTED TO DATE		460 C.Y.	12,618L.F.	100%	531.73C.Y.
ESTIMATED QUANTITIES MOVED OR PLACED TO DATE			12,618L.F.	100%	531.73C.Y.
AVERAGE DAILY QUANTITIES					
AVERAGE DAILY QUANTITIES NECESSARY TO COMPLETE PROJECT ON TIME					
NUMBER OF SHIFTS PER DAY					
HOURS PER SHIFT					

EQUIPMENT USED DURING THE WEEK:

ESTIMATED PERCENT COMPLETE (STRUCTURES)

BRIDGE NO.								
PERCENT								

	WEATHER	WORK DAYS CHARGED	HOURS DELAY	CAUSE OF DELAY
SUNDAY 17	Cloudy			
MONDAY 18	Cloudy			
TUESDAY 19	Cloudy			
WEDNESDAY 20	Cloudy			
THURSDAY 21	Fair			
FRIDAY 22	Fair			
SATURDAY 23	Fair			

Routing
Bond
RECEIVED
MAY 25 1970
Johnson
CONSTRUCTION DIVISION

Work Completed March 31, 1970

GENERAL DESCRIPTION OF ACTIVITIES FOR THE WEEK	
SUNDAY	
MONDAY	
TUESDAY	
WEDNESDAY	
THURSDAY	
FRIDAY	
SATURDAY	

REMARKS

Work on this project was completed March 31, 1970.

Partial Semi-final submitted to Division Office on May 21, 1970, Narrative Report, Summary of Test Results and As Constructed Plans will be submitted in the near future.

SIGNED _____ LOCATION Roseburg, Oregon

PRIME RESIDENT SUBMIT 2 COPIES. WHEN BRIDGES AND GRADING BOTH ARE INVOLVED, SUBMIT 3 COPIES.

RECEIVED
MAY 18 1970
FOR FILE

OREGON STATE HIGHWAY DIVISION

I-5-3(84)145
-7280

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

April 8, 1970

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street, N.E.
Salem, Oregon 97301

Contract 7280
Prefix 610-1030
FAP I-5-3(84)145

Dear Sir:

The work under Contract No. 7280, Cabin Creek Safety Rest Area Section of the Pacific Highway in Douglas County, was completed on March 31, 1970.

We request that your office inspect the contract work and return two signed copies of this letter indicating acceptance or listing below any items or conditions of the contract which would prevent your final acceptance of the contract work.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

NOTED
F. B. KLABOE

F. D. Morgan
Construction Engineer

Bureau of Public Roads
Oregon Division Office Endorsement Date 5-7-70

Conditions noted on above date:
Project satisfactorily completed.

G. K. Hansen
for R. E. Simpson
Division Engineer

RECEIVED
MAY 15 1970
OFFICE OF
STATE HIGHWAY ENGINEER

VG:fw
cc: Forrest Cooper
F. D. Morgan

RECEIVED
NOV 6 1969

FHWA-121 (12-67)

UNITED STATES GOVERNMENT

Memorandum

FOR FILE
I-5-3(84)145
7280

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Bureau of Public Roads
Box 300
Salem OR 97308

DATE: November 4, 1969

In reply refer to: 08-35-EC

E Edwards

SUBJECT: Oregon Project I-5-3(84)145
Cabin Creek Safety Rest Area
Lawn Irrigation System Revisions

Mr. Merchant's October 28, 1969 letter requested review and approval of a proposed revision to the irrigation system at the Cabin Creek Safety Rest Area. The proposed change would consist of connecting the new 6 inch A-C water main to the existing lawn irrigation system with approximately 175 feet of 2½ inch water line. This connection would require a pressure vacuum breaker and other fittings along with a concrete box to house the equipment. The proposed revision is estimated to cost approximately $570.00.

We have no objection to the work being performed subject to cost justification, however, since the contract time has already expired, approval of the additional work should not be considered as justification for a time extension on the project beyond the actual time required to complete the revision.

One print each of approved sheets Numbers 3 and B-346 are returned herewith.

Enclosure

Prints ✓ Copy to Irwin 11-6-69

NOTED
JON EDWARDS

RECEIVED
NOV 6 1969
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
NOV 7 1969

Form FHWA-21 (rev. 7-69)

UNITED STATES GOVERNMENT

Memorandum

I-5-3(84)145
9280

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-5-3(84)145
Cabin Creek Safety Rest Area
Unsatisfactory Progress of Work

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Bureau of Public Roads
Box 300
Salem OR 97308

DATE: November 3, 1969

In reply refer to: 08-35-DB

The current Bureau of Public Roads Division office policy is to notify your office when the progress of work on Federal-aid construction projects is considered unsatisfactory in order that appropriate action can be taken when considered necessary or warranted.

The progress of work on the subject project is considered unsatisfactory since as of October 21, the date of the last contact inspection, approximately 147 percent of the contract time had elapsed while only about 72 percent of the work had been completed. The area engineer has discussed this condition with both the Division Engineer and the Resident Engineer. The present indication is that an extension of contract time is not justified since the time lag is the result of poor project management on the contractor's part.

NOTED
F. B. KLABOE

11-7-69
REFERRED TO
By Asst. State Hwy. Engr.

RECEIVED
NOV 7 1969
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
JUL 24 1969
FOR FILING

I-5-3(84)145

7280

July 24, 1969

M. B. Haist Construction
P. O. Box 692
Oakridge, Oregon 97463

Gentlemen:

We enclose for your files a fully executed copy of the following described contract which was awarded to you by the State Highway Commission:

Contract No. 7280 for a water system and an access road in the Cabin Creek Safety Rest Area on the Pacific Highway in Douglas County.

A copy of this contract is also being sent to the surety on your performance bond.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

ar
Enclosure

cc: Aetna Casualty & Surety Company
Ward Insurance Agency
D. J. Barbee
F. D. Morgan
I. D. Merchant
C. T. Keasey
Howard Harris
Roy Olson

RECEIVED
JUL 10 1969
FOR FILING

I-5-3(84)145
7280

July 10, 1969

M. R. Holst Construction
P. O. Box 692
Oakridge, Oregon 97463

Gentlemen:

Enclosed are three copies of Contract No. 7280 for $67,983.50 executed to you by the State Highway Commission on July 3, 1969. This contract is for a water system and an access road in the Cabin Creek Safety Rest Area on the Pacific Highway in Douglas County.

Two of these copies should be signed on the contract and bond pages and returned to this office for completion. Please follow exactly the instructions given on the blue slip attached to the contract.

The third copy of the contract stamped "Advance Copy to be Retained by Contractor" is furnished for your information pending receipt of a fully executed copy.

The calendar working count on this contract will begin July 22, 1969.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

cc
Enclosures

bc: Frank Morgan
D. J. Barbee
I. D. Merchant
William Geibel (SAIF)
G. T. Keaney
Howard Harris
Roy Olson

RECEIVED
JUL 7 - 1969
FOR FILING

I-5-3(84)145

7170

July 7, 1969

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street N.E.
Salem, Oregon

Dear Sir:

Confirmation of your tentative concurrence as of June 30, 1969 is requested in the award of contract for the Cabin Creek Safety Rest Area, Project No. I-5-3(84)145.

The contractor receiving the award is H. R. Holst, in the amount of $67,385.50, with Contract No. 7280 assigned. This bid was received on June 26, 1969, and awarded July 3, 1969.

All right of way or rights of entry have been acquired.

The low bidder completed the Anti-Collusion Statement included in our proposal, as required by PPM 21-6.1, and it will be retained in a permanent project file.

All rights of access, including utilities, to or from abutting property are either (1) denied by law, (2) have been acquired, or (3) have been acquired in condemnation proceedings which have been commenced and will be prosecuted to completion. All necessary arrangements have been made for all utility work not included as part of the construction contract to be undertaken and completed without conflicting or delaying the State contractor's operations.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

L. H. Young
Program and Planning Engineer

Bureau of Public Roads' Endorsement:

Date:

I concur in the award.

R. E. Simpson
Division Engineer

DAN:ls

RECEIVED
JUL 7 - 1969
FOR FILING
I-5-3(84)145
7280

July 3, 1969

Mr. M. B. Holst
P. O. Box 692
Coldridge, Oregon 97463

Dear Mr. Holst:

The State Highway Commission today awarded to you State Highway Contract No. 7280 for a water system and an access road in the Cabin Creek Safety Rest Area on the Pacific Highway in Douglas County.

This award was based on your bid of $47,595.50 which was the low bid submitted to the Commission on June 26 for this project.

Contract forms will be sent to you for execution within the next few days.

Very truly yours,

Floyd Omary, Secretary
OREGON STATE HIGHWAY COMMISSION

cc

bcc: D. J. Barbee
F. D. Morgan
I. D. Merchant
William Gaibel (SAIF)
Roy Olsen

RECEIVED
JUN 11 1969
FOR FILING

6-5-69

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

LETTER OF APPROVAL AND/OR AUTHORIZATION

PROJECT: I-5-3(84)145

SECTION: CABIN CREEK SAFETY REST AREA

I-5-3(84)145

TO: MR. FORREST COOPER
STATE HIGHWAY ENGINEER
SALEM, OREGON
7280

Klaboe

WORK : WATER SYSTEM

COUNTY : DOUGLAS

FROM: R. E. SIMPSON, DIVISION ENGINEER
SALEM, OREGON

DATE PS&E APPROVED: JUNE 4, 1969

DATE AUTHORIZED: JUNE 4, 1969

YOU ARE AUTHORIZED TO PROCEED WITH THE WORK CHECKED BELOW:

- (X) CONSTRUCTION — ADVERTISE FOR BIDS.
- ( ) RIGHT OF WAY.
- (X) OTHER (SPECIFY). AFTER AWARD CONCURRANCE YOU ARE AUTHORIZED TO PROCEED WITH CONTRACTOR'S FLAGGING SHOWN IN YOUR ESTIMATE IN AMOUNT OF $100.00/
- ( ) UTILITY ADJUSTMENT.
- ( ) RIGHT OF WAY INCIDENTALS AND RELOCATION PAYMENTS.

REMARKS AND LIMITS OF AUTHORITY:

MR. L. H. YOUNG'S JUNE 2, 1969 REQUEST AND CERTIFYING STATEMENTS ARE ACCEPTED.

PS&E DOCUMENTS FOR THE SUBJECT PROJECT HAVE BEEN REVIEWED AND ARE HEREWITH APPROVED.

A SIGNED COPY OF THE TITLE SHEET IS RETURNED HEREWITH.

NOTED
F. B. KLABOE

6-11-69

OFFICE USE

Young
W/enc

RECEIVED
JUN 10 1969
OFFICE OF
STATE HIGHWAY ENGINEER

DATE	SIGNATURE OF APPROVING OFFICIAL	TITLE
6-5-69	R. E. SIMSON	DIVISION ENGINEER

Oregon

FORM PR-48 (REV. 10-66)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

TRANSMITTAL AND REQUEST FOR INITIAL PROGRAM APPROVAL OF PROJECTS

(PPM 21-1)

STATE HIGHWAY DEPARTMENT: Oregon

DATE: 4/17/69

BY (Signature): Mr. Young's April 4, 1969 letter

TITLE:

CLASS OF FEDERAL FUNDS: [X] FAI [ ] FAP [ ] FAU [ ] FAS [ ] OTHERS

STAGE 1 * ITEM NOS. _____ THRU _____

STAGE 2 ITEM NOS. 575 THRU 577

ITEM NO.	PROJECT NOS.	LENGTH (Miles)	TOTAL ESTIMATED COST	FEDERAL FUNDS	Location	Work
575	I-5-3(84)145	0.0	$ 68,000	$ 62,500	Cabin Creek Rest Area (Pacific Highway	Installation of water supply system
576	I-5-3(85)171	0.0	345,000	317,000	Pacific Highway (Creswell Inter. & Hawley Rd.)	2 O'Xing. structures & approaches
577	I-80N-6(41)252	0.0	8,000	7,000	Old Oregon Trail Hwy. (Hilgard-Oro Dell Sec.)	Fencing

OTHER IDENTIFICATION AND/OR REMARKS (State)

REMARKS (Division)

You are authorized to proceed with the necessary preparatory work for Railroad and Utility adjustments on Item 576, Oregon Project I-5-3(85)171.

RECEIVED
APR 18 1969
OFFICE OF
STATE HIGHWAY ENGINEER

jyoung 4-21-69

FOR FILING

I-5-3(84)145
1280

RECEIVED
APR 21 1969

4-17-69

RECOMMENDED		APPROVED	
DATE	SIGNATURE AND TITLE	DATE	SIGNATURE AND TITLE
		4/17/69	For R. E. Simpson, Division Engineer

* Program approval and any authorization to proceed with a Stage 1 project shall not constitute and commitment of Federal funds nor shall it be construed as creating in any manner, any obligation on the part of the Federal Government to provide Federal funds for the undertaking.

USCOMM-DC 15366-P

RECEIVED
APR 7 - 1969

I-5,3(84)145
7280

April 4, 1969

Mr. R. J. Simpson
Division Engineer
Bureau of Public Roads
477 Hawthorne Street, S.E.
Salem, Oregon 97301

Dear Sir:

We are submitting program data for three Interstate Projects, Items 975 thru 977, which we desire to have included in the Federal-Aid Interstate Highway Program.

It is our intention to receive bid for these projects on May 15, 1969.

Very truly yours

Forrest Cooper
State Highway Engineer

By

L. H. Young
Program and Planning Engineer

RNC:dg

MONTHLY TRANSACTION NO.

DATE SUBMITTED TO W.O.

FORM PR-1 (REV. 4-61)

FEDERAL-AID PRO

(PPM 21-

CARD 2	REPORT NUMBER (19)(20) 1	PROJECT LOCATION (45 typewriter spaces) 21 I-5 2.5 mi. N. of N. Oakland Interchange 60	ADT	PRESENT 7,650	FUTURE (66) 14,800	YEAR (70)(71) 89						
CARD 3	CHARACTER OF PROPOSED WORK (35 typewriter spaces) 28 Water Supply System 62		NATL. FOREST (63)(65)	FH ROUTE NO. (66)(68)	SUPV AGCY (69)	DA CLASSIF. (70)	DA AREA (71)	EMERG. YR. (72)(73)	PL. AUTHY (74)(76)			
CARD 4	CLASS OF FEDERAL FUNDS Interstate							COUNTY NAME Douglas				
	NAME OF URBAN AREA 17-31							ROUTE NO. I	FEDERAL-AID I-5			

CARD 5	LINE NO.	CHANGE CODE	PROJECT CODE	WORK CLASS	WORK TYPE	STEP	TERMINI (Full description)	MILES	ESTIMATED PROJECT COST: TOTAL ESTIMATED COST	FEDERAL FUNDS
1	(14-15)	(16	41	42	43 46	53		(54)(58)	(59) 66	(67) (76)
5					PE		I-5 2.5 mi. N. of N. Oakland Interchange			
5					ROW		(Cabin Creek Rest areas)			
5					CONST (CODE) Y-022			0.0	68,000	62,500
							PROJECT TOTALS	0.0	68,000	62,500

(116) (23)(24)

CARD 1	CODE 1	PREPARED BY
1	14	PROGRAM APPROVAL DATES

This project is
under Project I-
storage for said

Budget Bureau No. 41-R2067; Approval Expires February 28, 1966

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

FEDERAL-AID PROGRAM DATA

(PPM 21-1)

		PRESENT	FUTURE	YEAR	REGION	STATE NAME	STATE CODE	APPN CODE	ITEM NO.
ange (65)	ADT	7,650	14,800 (68)	89 (70) (71) (72)	08	Oregon	35 (2) (3)	042 (4) (8)	575 (14) (18)

SUPV AGCY (69)	DA CLASSIF. (70)	DA AREA (71)	EMERG. YR. (72) (73)	PL. AUTH YR (74) (75)	PROJECT NUMBER PREFIX LETTER(S)	NUMBER	SEQ. NO.	I. Projects Only POST MI. (24) (26)	DESIG. 27
					I- 14 23	5-3(84) 18		145	

COUNTY NAME: Douglas — CODE: 019 (14) (16)

PROGRAM STAGE: [ ] 1 OR [X] 2

ROUTE NO. I — FEDERAL-AID: I-5 (32) — STATE (36) (37) — U.S.: I-5 (41)

MILES (54) (58)	TOTAL ESTIMATED COST (59) (66)	FEDERAL FUNDS (67) (76)	STATE FUNDS	OTHER FUNDS	CHARACTER OF PROPOSED WORK *(Full description)*
					Water Supply System Installation consisting of approx. 13,500' of water line, 2 well pumps, pump contrd house, 50,000 gal. reservoir, service road to reservoir, fencing of reservoir area and water meter paced chlorination unit (S.R. side bldg.) to handle the two new wells.
0.0	68,000	62,500	5,500		
0.0	68,000	62,500	5,500		

(16) (23) (24) (33)

REMARKS

Additional data: Item 546, Project I-5-3(80)145. This project is for the purpose of connecting the 2 wells drilled under Project I-5-3(80)145 to existing water system and provide storage for said water.

USCOMM DUSCOMM-DC 48905-P61

RECEIVED
MAR 17 1969
FOR THE STATE GOVERNMENT

Memorandum

I-5-3(84)145
1280

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

DATE: March 13, 1969

In reply refer to: 08-35-EC/400.1

Copy 'no' Hearing file

SUBJECT: Public Hearing Requirements

We concur that hearings are not required for the following projects under the provisions of paragraph 6c of PPM 20-8:

I-80N-2(42)39, Multnomah County Line-East Cascade Locks Section
Columbia River Highway, Hood River County
Work: Pavement Seal

I-5-3( )145, Cabin Creek Safety Rest Area
Pacific Highway, Douglas County
Work: Water System (Installation of)

I-80N-6( )252, Hilgard-Perry Section
Old Oregon Trail Highway, Union County
Work: Fencing (along Scenic Strip)

I-5-2( )69, N. & S. Canyonville Interchanges & W. Fork Interchange
Pacific Highway, Douglas County
Work: Roadside Improvement

I-5-2( )72, Speaker Road, Wolf Creek & Sunny Valley Interchanges
Pacific Highway, Josephine County
Work: Roadside Improvement

I-5-4( )235, Dever Road-N. Albany Interchange Section
Pacific Highway, Linn County
Work: Roadside Improvement

3-17-69
RETURNED TO
By Asst. State Hwy. Engr.

NOTED
F. B. KLABOE

RECEIVED
MAR 14 1969
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
MAR 6 - 1969

I-5-3(8)145
7280

March 7, 1969

Re: Hearing Requirements
FHWA 23 CFR 6(c)

Dear Sir:

We hereby request your concurrence that hearings are not required for the following listed projects under the provisions of paragraph 6c of FHWA 23 CFR, dated January 14, 1969. These projects do not have any adverse effect upon the abutting property, do not change the function of the existing facilities, and require no additional right of way but confine the work entirely within the existing right of way.

The following list of projects are tabulated according to dates and segment numbers appearing in the Project Data Engineering Schedule of Contract Lettings, Issue of February 24, 1969.

Oregon

a. National County Line-Hart Mound Road Sections
Columbia River Highway
Project I-84-2(22)3
Hood River County
Nor.: Pavement Leal

Remarks: This project was previously scheduled on the July, 1968 letting, and two bid rejected.

b. Cabin Creek-Curtin Section
Pacific Highway
Project I-5-3(8)145
Douglas County
Nor.: Water Pollution Abatement Only

c. Hazard-Ferry Section
Old Oregon Trail Highway
Project I-84-3(2)52
Union County
Nor.: Fencing along Roads Only

Mr. H. J. [illegible]
March 4, 1960
Page 2

Amount $1,[illegible]

2. N. of S. Canyonville Interchange to N. Fork Interchange
Pacific Highway — Douglas County
Project I-5-2( )6 — Work: Roadside Improvement

3. Spencer Road, Wolf Creek - Sunny Valley Interchange
Pacific Highway — Josephine County
Project I-5-4( )72 — Work: Roadside Improvement

Location 15.[illegible]

3. Dever Road-N. Albany Interchange Section
Pacific Highway — Linn County
Project I-5-4( )29 — Work: Roadside Improvement

Very truly yours,

Forrest Cooper
State Highway Engineer

By

J. H. Young
Program and Planning Engineer

JG:bb

cc: F. B. Rinker
D. J. Norton
H. W. Slatton
L. H. Crane
B. L. Gifford

I-5-4(67) Talbot-N. Albany Interch. Sec. 1969
235 of Pacific Hwy. near Albany.
#7281 (Grading & signing)

STATE COPY

RECEIVED
JUN 2 - 1971
OSHD (Johnson)
Region
WASH DC Area Engr, Reno

FORM PR-33B (REV. 3-68)

FINAL ACCEPTANCE REPORT

(PPM 20-6.1)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

I-5-4(67)235

REGION NO.	REPORT NO.	COUNTY	DIVISION
9	15	Marion&Linn	Oregon
DATE OF REPORT	**REPORT MADE BY**		**PROJECT NO.**
6-24-71	L.I. Reese, Hwy Engr Trainee		I-5-4(67)235
COMPLETION DATE	**ACCEPTANCE DATE BY CONTRACTING AGENCY**	**TIME ELAPSED**	**CONTRACT TIME**
12-8-70	1-6-71	96 *	265 calendar workdays
APPROVED EXTENSIONS	**LOCATION**		
74 calendar workdays	I-5 North Albany Interchange - N. 7.54 mi.		

*The PR-47, Statement of Materials and Labor Used by Contractors on Highway Construction Involving Federal Funds, has been submitted.

*A copy of the State's materials certificate is attached to the Division office copy of this report.

Compliance reviews made indicate that all applicable contract requirements relative to wage rates, payroll submissions, and labor provisions have been met.

There is compliance with section 1.23 of the Regulations pertaining to encroachment on the right-of-way.

REMARKS: *The project has been completed in reasonable close conformity with the approved plans and specifications, including authorized changes and extra work.*

TALBOT ROAD - NORTH ALBANY INTERCHANGE SECTION
PACIFIC HIGHWAY
Safety Project

This project provided for the revising of slopes, guardrail, signposts, and other miscellaneous features on 7.9 miles of existing Interstate Highway to bring the project up to present safety standards set forth in the "AASHO Yellow Book". This was the first major project in Oregon bringing older sections of the Interstate to the AASHO standards.

Through minor program change and revision of project limits, work at the Illahee Road Undercrossing was also accomplished under Extra Work Order No. 8. This work consisted of constructing a concrete protective barrier and guardrail connections for protection of the piers from the traveling public at the Illahee Undercrossing.

The project was completed at a final cost of $970,142.74 exclusive of engineering and contingencies, which is an underrun of 10.8%. Individual overruns and underruns are explained by the resident engineer in a statement on file with the Division copy of this report.

The work was completed on December 8, 1970. The State Highway Commission authorized acceptance of the project as of January 6, 1971.

A "before and after" pictorial presentation of some of the improved sites accompany this report.

RECEIVED
JUN 30 1971
OFFICE OF
STATE HIGHWAY ENGR.

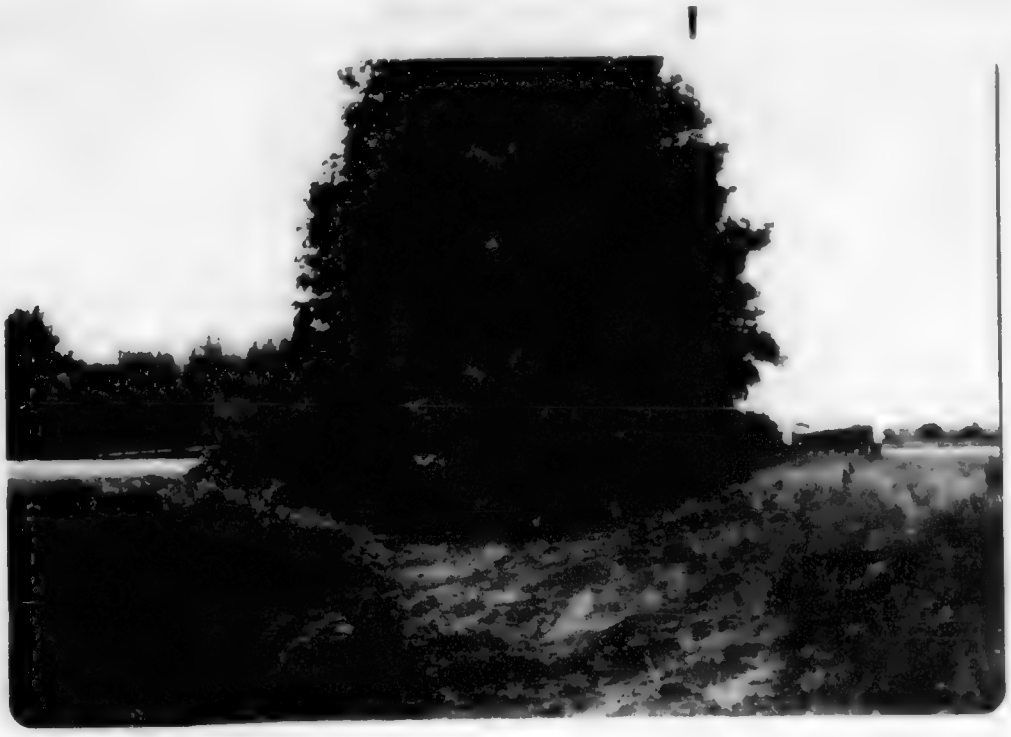
NOTED
TOM EDWARDS

* NOTE: Not applicable for direct federal projects.

ACCEPTANCE OF PROJECT IS RECOMMENDED		ACCEPTED BY BUREAU OF PUBLIC ROADS	
SIGNATURE: by D B Carter L.P. Reese		SIGNATURE: NOTED TOM EDWARDS	
TITLE: Area Engineer	DATE: 6/28/71	TITLE: ... L. Simpson, Division Engineer	DATE: JUN 29 1971

REPLACES PR 33A(2) REV. 4-66 WHICH MAY BE USED UNTIL SUPPLY IS EXHAUSTED.

Slope Flattening in Median
Installation of Flarred Wingwall Guardrail and Earth Berm



(Before)

(After)

Slope Flattening in Median
Installation of Flarred Wingwall Guardrail and Earth Berm

(Before)

(After)

Installation of Flarred Guardrail on Shoulder

(Before)

(After)

Guardrail attachment to the Structure

(Before)

(After)

Guardrail attachment to the Structure

(Before)

(After)

Slope Flattening in Median
Installation of Flarred Wingwall Guardrail and Earth Berm

(Before)

(After)

Illinois Road Undercrossing
Concrete Protective Barrier and Guardrail Connection

(After)

Installation of Concrete Protective Barrier, Flarred Wingwall Guardrail and Earth Berm.

Before

After

Protective Barrier and Guardrail, Attachment Closeup.

Slope Flattening in Median
Installation of Flarred Wingwall Guardrail and Earth Berm

(After)

Slope Flattening in Median
Installation of Flarred Wingwall Guardrail and Earth Berm

(After)

RECEIVED
FEB 2 - 1971

I-5-4(67)235
7271

February 2, 1971

[illegible]
418 Failing Building
Portland, Oregon 97204

Pacific Surety Company
315 Montgomery Street
San Francisco, California 94104

Gentlemen:

On January 6, 1971, we wrote to you concerning release of final payment on Contract No. 7271 awarded to Slate-Hall for work on the Talbot Road-Sherwood Albany Interchange Section of the Pacific Highway in Linn and Marion Counties.

Final payment on this contract is $48,764.14 and the total contract amount is $1,934,563.97 including $31,766.38 for work performed under force account.

Very truly yours,

Floyd Usery, Secretary
OREGON STATE HIGHWAY COMMISSION

flm

cc Slate-Hall
7805 S.W. 40th Ave.
Portland, Oregon 97219

Frank Morgan
Ivan Merchant
V. E. Skoog
R. D. Asbury

Pacific Surety Co.
100 William Street
New York 38, New York

Great American Insurance Co.
2030 Ninth Avenue
Seattle, Washington 98121

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

JAN 18 1971

I-5-4(67)235

TO : Mr. R. L. Porter, State Highway Engineer
Salem, Oregon

1741 G.K. Hoosner

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

DATE: January 15, 1971

In reply refer to: 08-35-DB

NOTED
A. E. Johnson

SUBJECT: Oregon Project I-5-4(67)235
Talbot Road - North Albany Interchange Section
State Force Order No. 1
Total estimated amount of the order - $100
Federal participation - $90

Reference is made to your letter dated January 12 requesting approval of subject order to install a glare shield on the "Santiam Rest Area" sign.

The use of State Forces is approved as being in the public interest in accordance with PPM 21-6.2 for the following reasons:

1. The glare shield was inadvertently overlooked in the plans for this sign. The contractor has left the project; therefore, it would be more economical and expeditious for State forces to install the glare shield.

2. The amount of the work is too small to warrant a separate contract.

Equipment rental rates will be according to a schedule that has been previously approved by this office for use on force account work.

Reimbursement is to be made on an actual cost basis. A signed copy of the order is returned herewith.

Enclosure
State Force Order No. 1

Johnson
copy to Morgan
1-21-71

NOTED
TOM EDWARDS

RECEIVED
JAN 18 1971
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

STATE COPY

Form A-10[illegible]

APPROVED EFFECTIVE DATE 12-24-70
Contingent upon modification of project agreement if additional funds are required
BY J. K. Hansen
TITLE Dist. Engineer
DATE 1-15-71

OREGON STATE HIGHWAY DEPARTMENT

Order for State Force Work

APPLYING TO CONTRACT PROJECTS FEDERAL HIGHWAY ADMINISTRATION Order No. 1

Project Name Talbot Road-North Albany Interchange Date December 22, 1970

Highway Pacific Contract No. 7281 F. A. Project No. I-5-4(67)235

County Marion and Linn Prefix 622-1031 Account No. 272-01

Description of Work To Be Done: Install glare shield on Santiam Rest Area sign which was constructed under Price Agreement #10 for the subject project.

Location by Station Numbers: 709+50 Lt. (Northbound lane) M.P. 60.64

Estimate of Quantities and Costs:

Material	30.00
Labor	35.00
Equipment	35.00
	$100.00

Explanation: Glare shield was not included on shop drawings submitted by the contractor for approval. Material was fabricated according to these plans which had been checked by the Bridge Section and approved. As a total result, the installation of glare shield was not researched further nor was the contractor advised that this was ever intended to be a part of the project. As this is a minor installation, State Forces can attach this item (over)

INSTRUCTIONS

Submit a separate order for each piece or kind of state force work to be undertaken. Use the account number applying to that work as indicated in the account numbers assigned to state force work on contract jobs.

Five copies of the order are to be submitted to Salem. After approval by the Assistant State Highway Engineer, one copy will be sent to the Division Engineer and one copy to the Resident Engineer.

Project authorization	$3,238,936.06
Present estimate of project cost, including $100.00 for work under this order	$3,121,949.14
Expected under-run / over-run (amount)	$116,986.92
Expected under-run / over-run (per cent)	9.15

Space to right of this line is for use of Salem Office

Submitted by: L. L. Lacayre Resident Engineer

Approval Recommended: [illegible] Construction Engineer or Bridge Engineer

Approval Recommended: R. L. G. Division Engineer

Approved: [illegible] Construction Engineer. Office Engineer.

CC: Glenn Zitz Orig to Mayer 1-21-71

State Printing J.K.

to the sign at much [illegible] cost than n[illegible]stating a supplemental p[illegible]st
with the contractor, who would be r[illegible]ired to move his operation t[illegible]nito
From Bellevue, Washington.

Prior approval received thru [illegible]nal Office December 17, 1970.

This work has not been done.

RECEIVED
JAN 8 - 1971
FOR FILE

I-5-4(67)235
7281

January 6, 1971

Oregon State Highway Commission

Gentlemen:

Work was completed December 8, 1970 on Contract No. 7281. The contract was with Slate-Hall and was for grading and signing on the Talbot Road-North Albany Interchange Section of the Pacific Highway in Marion and Linn Counties.

As the contractor has completed all work according to specifications, I recommend that you accept the project effective January 6, 1971 and that you concur in this procedure at the Commission meeting on February 16, 1971.

It is assumed that if you have no objections to this action and you do not advise me to the contrary, I may consider the matter has your approval.

Very truly yours,

R. L. Porter
State Highway Engineer

cc: Floyd Query
Tom Edwards
A. E. Johnson
Victor D. Wolfe
F. D. Morgan
I. D. Merchant
V. E. Skoog
L. H. Young
R. D. Asburry

VG:fw

I-5-4(67)235

FORM E-1 (REV 12-64)

OREGON STATE HIGHWAY DEPARTMENT

FIELD ENGINEER'S WEEKLY REPORT

FOR CONSTRUCTION PROJECTS ONLY
CONSTRUCTION AND BRIDGE DIVISIONS

SECTION: TALBOT RD.-NO. ALBANY INTCH.		WEEK ENDING: December 19, 1970
		SECTION PREFIX: 622-1031
HIGHWAY: Pacific		COUNTY: Marion and Linn
NAME OF JOB: Talbot Rd.-No. Albany Interchange	KIND OF WORK: Grading and Signing	
CONTRACTOR: Slate - Hall	CONTRACT NUMBER: 7281	FEDERAL AID PROJECT NUMBER: I-5-4(67)235
DATE OF CONTRACT: July 3, 1969	DATE WORK STARTED: July 14, 1969	ESTIMATED COMPLETION DATE: Completed
AVERAGE FORCE ON PROJECT FOR THE WEEK: MEN: 0 SUPERVISION: 0	SPECIFIED WORK DAYS / WORK SPECIFIED CALENDAR DAYS: 339	WORK DAYS USED / WORK CALENDAR DAYS USED: 324
	SPECIFIED COMPLETION DATE	PERCENT OF TIME ELAPSED: 96
PROJECT AUTHORIZATION: $1,238,936.06		PERCENT OF CONTRACT COMPLETED BASED ON ESTIMATED COST: 100
EXCLUSIVE OF ENGINEERING: $1,150,833.91	ENGINEERING AUTHORIZATION: $88,102.12	
ESTIMATED COST OF COMPLETED PROJECT, EXCLUSIVE OF ENGINEERING: $1,033,747	ENGINEERING COST TO DATE: $83,350	PERCENT OF CONTRACT COMPLETED BASED ON TOTAL AUTHORIZATION: 93
ESTIMATED PERCENT: ~~OVERRUN~~ UNDERRUN 8 %	PERCENT OF AUTHORIZATION 95 %	DATE PROJECT WAS COMPLETED: December 8, 1970

Semi-final data forwarded October 16, 1970

ESTIMATED PERCENT COMPLETE (ROADWORK)

CLEARING	DRAINAGE	GRADING	BASE Lev.Crs.	OIL AND/OR PAVE.	~~GUARDRAIL~~ Guardrail		
100	100	100	100		100		

	GRADING	SURFACING	~~GUARDRAIL~~ Guardrail	OIL & BITUMINOUS MACADAM	PAVING
MILES IN PROJECT	7.9	7.9	7.6		
MILES PARTIALLY COMPLETED	7.9	7.9	7.6		
MILES COMPLETED	7.9	7.9	7.6		
TOTAL ESTIMATED QUANTITIES (CONTRACT)	269,900 cy	34,700 ton	43,200 ft		
TOTAL QUANTITIES CORRECTED TO DATE	217,020 cy	36,800 ton	40,230 ft		
ESTIMATED QUANTITIES MOVED OR PLACED TO DATE	217,020 cy	36,800 ton	40,230 ft		
AVERAGE DAILY QUANTITIES	0	0	0		
AVERAGE DAILY QUANTITIES NECESSARY TO COMPLETE PROJECT ON TIME	0	0	0		
NUMBER OF SHIFTS PER DAY	0	0	0		
HOURS PER SHIFT	0	0	0		

EQUIPMENT USED DURING THE WEEK:

None

ESTIMATED PERCENT COMPLETE (STRUCTURES)

BRIDGE NO.	Box Culv.		Signs
PERCENT	100		100 (Contract signs 100%, PA #10 sign 100%)

	WEATHER	WORK DAYS CHARGED	HOURS DELAY	CAUSE OF DELAY
SUNDAY	Cloudy-Showers			
MONDAY	Cloudy-Rain			
TUESDAY	Cloudy-Rain			
WEDNESDAY	Cloudy-Rain			
THURSDAY	Fair			
FRIDAY	Foggy			
SATURDAY	Overcast (est)			

Routing

Brooker — Bond — Walker — Boehme — Johnson — Clapp — Litchfield — Stein

RECEIVED
DEC 21 1970
CONSTRUCTION
DIVISION

GENERAL DESCRIPTION OF ACTIVITIES FOR THE WEEK

SUNDAY	No activity.
MONDAY	No activity.
TUESDAY	No activity.
WEDNESDAY	No activity.
THURSDAY	No activity.
FRIDAY	No activity.
SATURDAY	No activity. (week ending December 19, 1970)

REMARKS

Final inspection has been made and project was considered acceptable.

Semi-final data forwarded Oct. 16, 1970.

State Force Order is being made to install glare shield on sign at Santiam Rest Area.

FINAL REPORT

SIGNED _____ LOCATION Corvallis, Oregon

L.L. MacIntyre, Res. Engr.

PRIME RESIDENT SUBMIT 2 COPIES. WHEN BRIDGES AND GRADING BOTH ARE INVOLVED, SUBMIT 3 COPIES.

BP-FS16

RECEIVED
JAN 6 - 1971

For File...

OREGON STATE HIGHWAY DIVISION

I-5-4(67)235
7281

HIGHWAY BUILDING • SALEM, OREGON • 97310

December 18, 1970

Mr. R. E. Simpson
Division Engineer
Federal Highway Administration
P. O. Box 300
Salem, Oregon 97308

Contract 7281
Prefix 622-1031
FAP I-5-4(67)285

Dear Sir:

All work under Contract No. 7281, Talbot Road-North Albany Interchange Section of the Pacific Highway in Marion and Linn Counties, was completed on December 8, 1970.

We request that your office inspect the contract work and return two signed copies of this letter indicating acceptance or listing below any items or conditions of the contract which would prevent your final acceptance of the contract work.

Very truly yours,

R. L. Porter
State Highway Engineer

NOTED
TOM EDWARDS

By F. D. Morgan
F. D. Morgan
Construction Engineer

copy to Constr
1-6-71

NOTED
A. E. JOHNSON

Federal Highway Administration
Oregon Divid on Office Endorsement: Date 12-14-70

Conditions noted on above date:

Final Inspection made on above date. No conditions which would prevent final acceptance noted.

for G. K. Hoose
R. E. Simpson
Division Engineer

RECEIVED
JAN 5
OFFICE OF
STATE HIGHWAY ENGINEER

LPR:bk

VG:fw

cc: R. L. Porter
F. D. Morgan

RECEIVED
NOV 12 1970
FOR FILING

I-5-4(67)235
7291

October 8, 1970

3-H
9-30-70

State-Wali
7605 N. E. 40th Avenue
Portland, Oregon

Gentlemen:

The State Highway Commission at its meeting on September 30, 1970, considered your request for an extension of 75 days on Contract No. 7291 on the Talbot Road-N. Albany Interchange section of the Pacific Highway in Linn and Marion Counties.

In light of the available facts and the provisions of the contract, the Commission granted you a 74-day time extension without assessment of liquidated damages.

Very truly yours,

Floyd Quary, Secretary
STATE HIGHWAY COMMISSION

dr

bc F. D. Morgan
I. D. Merchant
V. E. Skoog
R. D. Asbury
L. L. MacIntyre
Federal Highway Administration

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

TO : Mr. R. L. Porter, State Highway Engineer
Salem, Oregon

DATE: September 22, 1970

In reply refer to: 08-35-DB

FROM: for K. E. Simpson, Division Engineer
Salem, Oregon

G. K. Hosmer

SUBJECT: Oregon Project I-5-4(67)235
Talbot Road - North Albany Interchange Section
Pacific Highway

I concur in your granting of a 74-day time extension on the subject project for the reasons described in your letter dated September 17.

cc:
Region (08-00.34)

NOTED
A. E. JOHNSON

RECEIVED
SEP 22 1970
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

September 17, 1970

Mr. R. E. Simpson, Division Engineer
Federal Highway Administration
Post Office Box 500
Salem, Oregon 97308

Dear Sir:

Re: Talbot Road-North Albany Interchange Section, Pacific Highway
Project No. I-5-4(67)235

The Slate-Hall Company, contractor on the subject project, has requested a 75-day contract time extension. The original 265 days allowed on this project expired July 14, 1970, and the project has been under an ordered stop work status since August 27, 1970.

All work was completed by then except the furnishing and installation of a cantilever sign support at the exit to the northbound Santiam Safety Rest Area. This was added by a late price agreement (Price Agreement No. 10 approved by your office August 17, 1970) and the contractor is waiting delivery of some necessary materials. The project therefore stands with 44 days liquidated damages accrued up to the current stop work order.

Extra Work Order No. 8 was also added very late in the contract (it was approved by Federal Highway Administration July 16,1970). This order covers installation of CM type barrier at the Illahee overcrossing structure which was beyond the limits of the original contract. This work constituted the contractor's main effort from July 30 to August 27 or 29 days.

Extensive changes and additions to the guardrail work were made through the life of the contract by three extra work orders and five price agreements which accumulated to cause delay to the rail work. These changes and additions justify extension for the 15 days from July 14 (when the contract time expired) to July 30 (when the Illahee work started).

NOTED
A. E. JOHNSON

In addition to the above, time must also be allowed for the exit sign work covered by Price Agreement No. 10 when it is actually accomplished. This is estimated to take 20 days.

We therefore propose a total of 74 days time extension on this project and ask your concurrence.

Very truly yours,

R. L. Porter
State Highway Engineer

By

A. E. Johnson
Assistant State Highway Engineer

cc R. L. Porter
Tom Edwards
F. D. Morgan
R. D. Asberry
JAB:fw ms

FORM E-90 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

September 11, 1970

SUBJECT: Talbot Road-N. Albany Interchange
Contract No. 7281
Request for Time Extension

To:

Mr. A. E. Johnson
Assistant State Highway Engineer
BUILDING

Slate-Hall requests a 75-day time extension on the subject project, citing four reasons:

(1) Added work on guardrail and sign items.
(2) Additional sign structure at northbound Santiam Safety Rest Area.
(3) GM safety rail added at Illahee Overcrossing (outside limits of original contract).
(4) Delay in seeding work.

This was a 7.9-mile safety project for over $1,000,000 on which the 265 calendar workday count started July 22, 1969 and the time allowed elapsed July 14, 1970.

The first three reasons offered by the contractor are all valid and justify significant extension of the contract time. Three Extra Work Orders and five Price Agreements involved changes or additions to guardrail on the original project. Some of these did not involve much money change, but did involve plan changes that had a delaying effect on the contractor's scheduling and acquisition of materials. There were numerous structures on this section with at least 75 connections of guardrail to be made to structures in several different patterns. GM type rail was added at three structures which have columns close to the freeway shoulders. The effect on completion time from this first reason cannot be determined precisely, but is assigned a value as shown below.

The second reason concerns Price Agreement No. 10 which was negotiated very late in the contract and requires a complete new cantilever sign structure at a new location for the northbound rest area off ramp. The project is currently under a stop work order awaiting delivery of material for this item which is the only work left. The contractor requests 30 days to accomplish this work after the stop work order is lifted and we believe this is reasonable and recommend it.

The third item concerning installation of GM rail at the overcrossing is covered bya $9,000 Extra Work Order also undertaken at a very late stage. This was a separate operation at a location several miles north from the original project beginning. Work on this work order started about July 30, 1970 (some 16 days after the contract time allowed had elapsed) and continued intermittently for 29 days until August 27, 1970 which was the effective date of the current stop work order. Extension for this 29 days is recommended.

We question the validity of the fourth reason for delay in seeding and fertilizing as this work was done concurrent with some of the time recommended under No. 3 above for the Illahee work.

The project stands with 44 days liquidated damages accrued (up to the August 27 stop work order). The 29 days recommended for the Illahee work leaves 15. We believe the guardrail changes discussed first above easily justify this 15 days for extension. We therefore recommend a total of 74 days extension (29 + 15 + 30 for the sign installation yet to be made). This should delete all liquidated damages which would accrue at the rate of $200 per day.

This is an Interstate project. Rough draft letters to the Federal Highway Administration and the Highway Commission are enclosed.

F. D. Morgan
Construction Engineer

By John A. Bond
John A. Bond
Construction Administration Engineer

JAB:fw
Enc.
cc V. L. Gallagher

RECEIVED
SEP 16 1970
OFFICE OF
STATE HIGHWAY ENGINEER

FRED N. SLATE CO.
P.O. Box 19238
7805 S.W. 40TH AVENUE
PORTLAND, OREGON 97219
AREA CODE 503
246-4217

SKILL, INTEGRITY RESPONSIBILITY

E. C. HALL CONSTRUCTION CO.
11655 S.W. BARBUR BLVD.
PORTLAND, OREGON 97219
AREA CODE 503
639-1116

SLATE-HALL

GENERAL CONTRACTORS
P. O. Box 19238
Portland, Oregon 97219

August 12, 1970

Re: Talbot Rd.-No. Albany
Interchange
Contract No. 7281

L. L. MacIntyre, Resident Engineer
Oregon State Highway Department
3700 Philomath Highway
Corvallis, Oregon

Dear Sir:

We are requesting additional time based on the following conditions:

1. Additions to Guardrail and Sign Items amounting to $13,000.00 plus 3 force account orders. Request 20 days.

2. Additional time necessary for acquiring and erecting sign structure at Santiam river rest area, on Price Agreement negotiated after the original finishing date of July 14, 1970. Request 30 days.

3. Additional time necessary to complete Force Account work on Ilahee Overcrossing ordered and started after our stated finishing date and still underway. Request 20 days.

4. Additional time necessary to perform seeding work that was postponed by state request to a more favorable time. Request 5 days.

Hopefully some of these days requested will overlap reducing the necessary time for completion; however because of the delay in obtaining materials for the Santiam Sign Structure, it is probably a number of days will elapse with no work performed.

Yours very truly

SLATE-HALL

James N Leinbach

James N. Leinbach
Partner

JNL:m

RECEIVED
SEP 24 1970
FOR FINANCE

I-5-4(67)235
7281

September 23, 1970

Oregon State Highway Commission

Request for Extension of Time
No. 9
September 30, 1970 meeting

Gentlemen:

Slate-Hall Company, contractor on the Talbot Road-North Albany Interchange Section of I-5 in Linn and Marion Counties, Contract No. 7281, has requested a 75-day time extension. The contractor cites added work and alleged delay to his seeding work.

This was a safety project covering 7.9 miles of interstate freeway and included extensive changes and additions to the guardrail. Three Extra Work Orders and five Price Agreements imposed changes on this guardrail work to comply with latest standards and accomplish the safety objectives. Another late order was added to the contract to cover installation of protective barrier-type rail at the Lilahee overcrossing which was outside the limits of the project but was the scene of a fatal accident last year. The contractor cooperated in accomplishing this extra work requested by the State and it was done after the original contract time had expired.

Another order was added at a late stage to cover complete relocation and redesign of the overhead exit sign at the northbound Santiam Safety Rest Area also for safety reasons. The project is currently under a stop work order with no time being charged pending delivery of these sign materials.

The previously mentioned reasons justify a 74-day time extension which is expected to delete all liquidated damages which have accrued and which will yet accrue when the time count is resumed and the exit sign work is completed. Liquidated damages accrue at the rate of $200 per day. This was an Interstate project and we have the concurrence of the Federal Highway Administration.

This matter will be on the agenda for your consideration at the September 30 meeting.

Very truly yours,

R. L. Porter
State Highway Engineer

cc: Floyd Quary
Tom Edwards
A. E. Johnson
Victor D. Wolfe
F. D. Morgan
I. D. Merchant
V. E. Skoog
L. H. Young
R. D. Asburry

JAB:fw sr

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7281 Contractor Slate-Hall

Highway Pacific

Section Talbot Road-North Albany Interchange

Kind of Work Grading and Signing

It is recommended that the request for increase in the number of workdays within which to complete said contract be ~~DENIED~~ or GRANTED. The reasons for such recommendation are as follows:

Recommend 74 days extension for guardrail changes, Extra Work Order No. 8 Illahee structure safety work and Price Agreement No. 10 exit sign work.

Recommended for Approval:

Division Engineer

for Construction Engineer or Bridge Engineer

Assistant State Highway Engineer

Contract No.	7281
Project designation	I-5-4(67)235 State-Federal
Date awarded	July 3, 1969
Work started	July 14, 1969
Per cent completed	98 Date
No. of Workdays Allowed	265
No. of Workdays Used	309 (to 8-27-70 stop work)
No. of Added Workdays Requested	74

B-600 (Rev.)—SM—8-64

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon 97310

Date August 12, 1970

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 265 days to 340 days, within which to complete our Contract No. 7281, without the assessment of liquidated damages. The said contract is described as follows:

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

See attached letter.

Respectfully submitted,

SLATE-HALL
Contractor

By James N Leinbach
James N. Leinbach, Partner

CONSENT OF SURETY

Date ....., 19....

We, ...

....., as

surety on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

.....
Attorney-in-fact

(SEAL)

.....
Resident Agent

I-5-4(67)235
728

RECEIVED
SEP 29 1970
OFFICE OF
STATE HIGHWAY ENGINEER

STATE COPY

OREGON STATE HIGHWAY DEPARTMENT

Order for Extra Work

TO BE PERFORMED ON FORCE ACCOUNT BASIS

APPROVED EFFECTIVE DATE 9-28-70
Contingent upon modification of project agreement if additional funds are required.
BY S. K. Hosmer
Dist. Engineer
TITLE
DATE 9-28-70
FEDERAL HIGHWAY ADMINISTRATION

Project Name Talbot Road - North Albany Interchange
Highway Pacific
County Marion and Linn
Contractor Slate - Hall
Address 7805 SW 40th Avenue, Portland Oregon 97219

Date September 11, 1970
Contract No. 7281
Prefix 622-1031
F. A. Project No. I-5-4(67)235
Order No. 8 Supplemental

The following work is hereby classified as "Extra Work", to be performed and paid for in accordance with the terms of contract.

Description of work to be done: Construct concrete protective barrier and guard rail at Illahee Undercrossing in accordance with drawings on sheets 2F, 2G, 2H Revised 10-14-69, drawing on sheet 2C Revised 6-22-70, drawing on sheet 2J Revised 6-22-70, sheet 3 Revised 6-22-70, and all made part of the Talbot Road-North Albany Interchange project construction plans.

Location by station numbers: Station 373+80 to 377+50
Illahee Undercrossing at Mile Post 54.32

Estimate of quantities and cost:

	Original	Supplement	
Material	3600.00	2000.00	
Labor	3600.00	800.00	
Equipment	1800.00	200.00	
Total	9000.00	3000.00	Total $12,000.00

Explanation: (Explain here the conditions which cause this work to be classed as "extra work")
Not included in Original Contract. Contractor unable to furnish price for agreement, but will do as Extra Work.
Contract Specifications and Plans apply to work.
This work has been done.
Original estimate of cost insufficient.

NOTED
TOM EDWARDS

INSTRUCTIONS: A single order should not cover more than one class of work or more than one extra work job.

Submit five copies of the order to Salem. After approval of the order by the assistant state highway engineer, the Salem office will send one copy to the contractor, one to the division engineer and one to the resident engineer.

Project authorization	$1,238,936.06
Present estimate of project cost, including $3,000.00 for work under this order	$1,163,297
Expected under-run amount	$75,639.06
Expected under-run per cent	6.5

Space to right of this line is for use of Salem Office

Submitted by: L.L. MacIntyre, Resident Engineer

Approval Recommended: Reg Const, Division Engineer

Approval Recommended: Construction Engineer or Bridge Engineer

Approved: Deputy State Highway Engineer, Assistant State Highway Engineer or Office Engineer. Construction

9-24-70

State Printing

RECEIVED
JUL 14 1970
FOR FILING

I-5-4(67)235
7281

July 13, 1970

Mr. R. H. Sieqmen
Division Engineer
Bureau of Public Roads
477 Cottage St., N.E.
Salem, Oregon 97301

Project No. I-5-4(67)
Talbot Rd.-N. Albany Interchange
Section
Contract 7281

Dear Sir:

We are forwarding for your approval, copies of a Request For Program Change PR-9 form, covering the extension of project limits northerly 4.86 miles to include the installation of protective barrier and guardrail at the Illahe undercrossing piers. The addition of this work to the subject project, which we propose to do under the present project contract, has been previously discussed with members of your office. No increase in the cost of the project as currently under agreement is anticipated at this time for this additional work as present indications are that the contract costs will underrun.

We are also enclosing a copy of Mr. Morgan's memo of July 9, 1970, which sets forth additional information, and attached for your approval are copies of the extra work order for this work. Enclosed also are revised construction plan sheets 1, 2c, 24 and 3 which include this additional work.

We trust this information is sufficient for your concurrent approval of the PR-9 Program change and the extra work order.

Very truly yours,

R. L. Parker
State Highway Engineer

By

L. H. Young
Program and Planning Engineer

cc: F. D. Klahre
A. E. Johnson
F. D. Morgan
R. D. Mowery
E. H. Chase

Enclosures

CL:dg

MONTHLY TRANSACTION NO.

DATE SUBMITTED TO W.O.

FORM PR-9
(REV. 4-61)

REQUEST FO
OF INDIVIDUAL PROJE
(PPM 21-1

CARD					
2	REPORT NUMBER (18) (20)	PROJECT LOCATION (45 typewriter spaces) 21 I-5 North Albany Interch.-N. 12.4 mi. 55	ADT	21,200	FUTURE V (66) 41,000 (70) (71)

CARD										
3	CHARACTER OF PROPOSED WORK (35 spaces) 28 Guardrail and Signing 62	NATL. FOREST (63) (65)	FOR MISCELLANEOUS FUNDS ONLY FH ROUTE NO. (66) (68)	SUPV AGCY 69	DA CLASSIF. 70	DA AREA 71	EMERG. YR. 72 73	PL AUT 74

CARD		
4	CLASS OF FEDERAL FUNDS [1] Interstate	COUNTY NAME
	NAME OF URBAN AREA 17-31	F.A. SYSTEM Interstate

CARD 5	LINE NO.	CHNG CODE	PROJECT COUNT	WORK CL	WORK TYPE	STEP	STATUS	ITEM NUMBER	PROJECT NUMBER	TERMINI	MILES	TOTAL COST
	1	(14-15)	16	41	42	43 - 46	53				(54) (58)	(59)
	5				PE ROW CONST		ITEM AS NOW PROGRAMED Stage 2	570	I-5-4(67)	(Talbot Rd.-N. Albany Interchange Section)	7.54	1,211,404
										PROJECT TOTAL	7.54	1,211,404
	5				PE ROW CONST		REQUESTED REVISION Stage 2	570	I-5-4(67)	(Illahe U'xing & Talbot Rd.-N. Albany Interch. Section)	12.39	1,211,404 (18)
										PROJECT TOTAL	12.39	1,211,404

CARD		
1	A form PR-1 or PR-9 has been submitted within the last 7 days. Yes ☐	PROJECT WITHDRAWN YES ☐
1	COLUMN 14 ⟶ CODE 11	CODE 2

REASON FOR CHANGE: To extend the project limit
To include the installation of concrete pro
piers at no increase in the cost of the pro

NOTE: Projects splitting into two or more projects. Prepare a form PR-1 for all new projects resulting from such action.

DATE OF INITIAL APPROVAL:	PROGRAM REVISION REQUESTED	RECOMMEND
February 25, 1969	DATE 7-13-70	DATE
OTHER: May 28, 1969	SIGNATURE	SIGNATURE
	[redacted] Program & Planning Engineer	TITLE

[1] If revision includes transfer from one class of project to another, or covers joint financing, show both classes of funds involved.

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE AFTER 7-1-61

Budget Bureau No. 41-R2068; Approval Expires February 28, 1966

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

REQUEST FOR APPROVAL OF INDIVIDUAL PROJECT PROGRAM CHANGE (PPM 21-1 AND 22-1)

			FUTURE YEAR	REGION	STATE NAME	STATE CODE	APPN. CODE	ITEM NO.
4 mi. (65)	ADT	21,200	41,000 (66) (70) 89 (71) (72)	08 (74) (75)	Oregon	35 (2) (3)	042 4 6	570 (14) (18)

FOR MISCELLANEOUS FUNDS ONLY						PROJECT NUMBER		I PROJECTS ONLY	
NO. (68)	SUPV AGCY 69	DA CLASSIF. 70	DA AREA 71	EMERG. YR. 72 73	PL AUTH YR 74 75	PREFIX LETTER(S) 14	NUMBER-AGR. NO. I-5-4(67) 23 7 13	POST MI. MI. 235 (24) (28)	DESIG. 27

	COUNTY NAME	CODE
	Linn and Marion	047 14 043 18

A. SYSTEM	RTE NO.	FEDERAL AID	STATE	U.S.
Interstate	I	I-5 (32)	1 (36) (37)	I-5 (41)

TERMINI	MILES (54) (58)	PROJECT COST TOTAL COST (59) (66)	FEDERAL FUNDS (67) (76)	STATE FUNDS	CHARACTER OF PROPOSED WORK
(Talbot Rd.-N. Albany Interchange Section)	7.54	1,211,404	1,117,500	93,904	Install and reconstruct guardrail, flatten slopes, revise median, signing and landscaping.
PROJECT TOTAL	7.54	1,211,404	1,117,500	93,904	
(Illahe U'xing & Talbot Rd.-N. Albany Interch. Section)	12.39	1,211,404 (16) (23)	1,117,500 (24) (33)	93,904	Install and reconstruct guardrail, flatten slopes, revise median, signing and landscaping.
PROJECT TOTAL	12.39	1,211,404	1,117,500	93,904	

REASON FOR CHANGE: To extend the project limits to the north 4.85 miles to include Illahe U'xing. To include the installation of concrete protective barrier and guardrail at the Illahe U'xing piers at no increase in the cost of the project.

VISION REQUESTED	RECOMMENDED	APPROVED
—	DATE	DATE
	SIGNATURE	SIGNATURE
RX al Engineer	TITLE	TITLE

show both classes of funds involved.

USCOMM-DC 48905-P61

STATE COPY

RECEIVED
MAY 14 1970
OFFICE OF
STATE HIGHWAY ENGINEER

I-5-4(67)235
722/

APPROVED EFFECTIVE DATE 5-14-70
Contingent upon modification of project agreement if additional funds are required.

OREGON STATE HIGHWAY DEPARTMENT

Order for Extra Work

BY A. K. Hansen
TITLE Dist. Engineer

TO BE PERFORMED ON FORCE ACCOUNT

DATE 5-13-70, 1970

Project Name Talbot Road - North Albany Interchange — U.S. BUREAU OF PUBLIC ROADS

Highway Pacific — Contract No. 7201

County Marion and Linn — Prefix 622-1031

Contractor Slate - Hall — F. A. Project No. I-5-4(67)235

Address 7805 SW 40th Avenue, Portland, Oregon 97219 — Order No. 6

The following work is hereby classified as "Extra Work", to be performed and paid for in accordance with the terms of contract.

Description of work to be done: Remove 100 foot section of guardrail East side of NB lanes, sta. 899+83 to 900+83. Remove 150 foot section of guardrail East side of NB lanes, sta. 1001+62 to 1003+12. Remove 150 foot section of guardrail West side of SB lanes, sta. 1023+30 to 1024+80. The guardrail material removed from section East side NB lane 899+83 to 900+83 is to be reinstalled and realigned to form a parabolic curve so that the guardrail would extend into rosebush hedge at its southerly terminus. The guardrail removed from East side NB 1001+62 to 1003+12 and East side of SB 1023+30 to 1024+80 will be reinstalled under this order at another planned location. Payment for the reinstallation of all rail as called for above will be made under this order and not as a contract item.

Location by station numbers:

East side NB lane Sta. 899+83 to 900+83
East side NB lane Sta. 1001+62 to 1003+12
West side SB lane Sta. 1023+30 to 1024+80

Estimate of quantities and cost:

Equipment	300.00
Labor	350.00
Material	0.00
	$650.00

NOTED
F. B. KLAGE

Explanation: (Explain here the conditions which cause this work to be classed as "extra work") The removal or readjustment mentioned above was considered necessary after review of the project by BPR Area Engineer, and OSHD Asst. Division Engineer to provide for better appearance of rail and better conform to considered safety measures. This is a reassessment of judgement after rail was laid out and installed. This work has not been done.
Prior approval received through Division Office.

INSTRUCTIONS: A single order should not cover more than one class of work or more than one extra work job.

Submit five copies of the order to Salem. After approval of the order by the assistant state highway engineer, the Salem office will send one copy to the contractor, one to the division engineer and one to the resident engineer.

		Space to right of this line is for use of Salem Office
Project authorization	$1,238,936.06	
Present estimate of project cost, including $650.00 for work under this order	$1,201,541.56	
Expected under-run amount	$37,394.50	
Expected under-run per cent	3.0%	

Submitted by: L. L. MacIntyre — Resident Engineer

Approval Recommended: A.K.H. — Division Engineer

Approval Recommended: Construction Engineer

Approved: Construction Office Engineer. 5-14-70

State Printing

STATE FILE COPY

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MAY 14 1970
OFFICE OF
STATE HIGHWAY ENGINEER

I-5-4(67)235
7-38

APPROVED EFFECTIVE DATE
Contingent upon modification of project agreement if additional funds are required

OREGON STATE HIGHWAY DEPARTMENT

Order for Extra Work

BY G. K. Hossner
TITLE Dist. Engineer
DATE 5-13-70

TO BE PERFORMED ON FORCE ACCOUNT

U.S. BUREAU OF PUBLIC ROADS

Project Name Talbot Road - North Albany Interchange
Highway Pacific
County Marion and Linn
Contractor Slate - Hall
Address 7205 SW 40th Avenue, Portland, Oregon 97219

Contract No. 7261
Prefix 622-1031
F. A. Project No. I-5-4(67)235
Order No. 7

The following work is hereby classified as "Extra Work", to be performed and paid for in accordance with the terms of contract.

Description of work to be done: Install extra guardrail posts to provide a balance or symetery of post spacings where normal post location came at catch basin or light pole foundation and side of the structure to provide balance in appearance, also not increase designated post spacing and reduce strength of rail.

Location by station numbers:

SB West side 907+10	2 extra posts (Catch Basin)
SB West side 950+00	Extra post (Catch Basin)
SB West side 1045+45	Extra post (Light Standard)
SB West side 1047+25	Extra post (Light Standard)
SB West side 1049+00	Extra post (Light Standard)
SB West side 1050+70	Extra post (Light Standard)

NOTE
F. B. KLABOE

Estimate of quantities and cost:

Labor	20.00
Equipment	25.00
Material	65.00
Total	$110.00

Explanation: (Explain here the conditions which cause this work to be classed as "extra work") Additional posts not called for on project plans. (See description of work to be done).
This work has been started.
Prior approval received through Division Office and from BPR Area Engineer.

INSTRUCTIONS: A single order should not cover more than one class of work or more than one extra work job.

Submit five copies of the order to Salem. After approval of the order by the assistant state highway engineer, the Salem office will send one copy to the contractor, one to the division engineer and one to the resident engineer.

Project authorization	$1,238,936.05
Present estimate of project cost, including $110.00 for work under this order	$1,201,651.56
Expected under-run amount	$37,284.50
Expected under-run per cent	3%

Space to right of this line is for use of Salem Office

Submitted by: [signature] Resident Engineer

Approval Recommended: [signature] Division Engineer

Approval Recommended: [signature] Construction Engineer

Approved [signature] Deputy ... Assistant ... Engineer

5-14-70

State Printing

STATE COPY

APPROVED EFFECTIVE DATE 4-16-70
Contingent upon modification of pro- agreement if additional funds are required
BY R. K. H.
Dist. Engineer
TITLE
DATE 5-13-70

OREGON STATE HIGHWAY DEPARTMENT

Order for Extra Work

TO BE PERFORMED ON FORCE ACCOUNT BASIS

RECEIVED
MAY 4 1970
OFFICE OF
STATE HIGHWAY ENGINEER

I-5-4(67)235
7281

Date April 22, 1970
U. S. BUREAU OF PUBLIC ROADS

Project Name Talbot Road - North Albany Interchange
Highway Pacific
County Marion and Linn
Contractor Slate - Hall
Address 7805 SW 40th Avenue, Portland Oregon 97219

Contract No. 7281
Prefix 622-1031
F. A. Project No. I-5-4(67)235
Order No. 5

The following work is hereby classified as "Extra Work", to be performed and paid for in accordance with the terms of contract.

Description of work to be done: Construct Type 3 Woven Wire Fabric V Mesh fence on westerly side of Pacific Highway (I-5) between stations 821+10± to 831+00± for the purpose of preventing public access to borrow pit "A" as shown on the project plans and which was used by the contractor for required fill material on the project. No fence existed at this location prior to contractors use of borrow area. All material to conform to project specifications as they apply to material and workmanship.

Location by station numbers: Station 821+10± to station 831+00±.
(West side of Freeway M.P. 62.76 to M.P. 62.95)

NOTED
F. B. KLAUSE

Estimate of quantities and cost:

Labor	$ 500.00
Equipment	160.00
Material	840.00
TOTAL	$1,500.00

Explanation: (Explain here the conditions which cause this work to be classed as "extra work") No fence existed at this position which has been allowing the public free entry into the borrow area for the purposes of fishing, boating, etc.. This can promote hazards, also a convenient place to dump trash. Construction of this fence was not a contract item.
Prior authority received through Division Office and Bureau of Public Roads April 16, 1970.
This work has not been started.

INSTRUCTIONS: A single order should not cover more than one class of work or more than one extra work job.

Submit five copies of the order to Salem. After approval of the order by the assistant state highway engineer, the Salem office will send one copy to the contractor, one to the division engineer and one to the resident engineer.

Project authorization	$1,238,936.06
Present estimate of project cost, including $1,500.00 for work under this order	$1,200,891.56
Expected under-run amount	$ 38,044.50
Expected under-run per cent	3.0%

Space to right of this line is for use of Salem Office

Submitted by: L. L. MacIntyre, Resident Engineer

Approval Recommended: Asst Division Engineer

Approval Recommended: for Construction Engineer or Bridge Engineer

Approved: Deputy State Highway Engineer, Assistant State Highway Engineer or Constr. Office Engineer. 5-14-70

State Printing

W.T.

RECEIVED
APR 14 1970
FOR FILING

I-5-4(67)235
7281

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
April 7, 1970

To: Adrian Olson
PRELIMINARY DESIGN ENGINEER

SUBJECT: Access Revisions
Santiam Rest Area
Talbot Road-N. Albany Section
Pacific Highway

On March 19 this office made certain recommendations to D. J. Barbee relative to improving the safety in utilizing the accesses to the Santiam Rest Areas.

It is desirable that these be finalized so we might consummate an agreement with our interstate contractor to do these improvements while he is working on similar phases of work.

Before you finalize the plans for revising the radii and improving the signs, it would be appreciated if you would show them to Tom Edwards as requested in his attached March 19 letter to E. S. Hunter.

R. D. Asburry
DIVISION ENGINEER

by Gerald W. Wimer
Gerald W. Wimer
ASST. DIVISION ENGINEER

GWW/cg

Attach.

cc: Tom Edwards
F. D. Morgan
L. L. MacIntyre

RECEIVED
APR 8 1970
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
TOM EDWARDS

RECEIVED
MAR 30 1970
OFFICE OF
STATE HIGHWAY ENGINEER

I-5-4(67)235
7281

STATE COPY G-1P

OREGON STATE HIGHWAY DEPARTMENT

Order for Extra Work

TO BE PERFORMED ON FORCE ACCOUNT BASIS

APPROVED EFFECTIVE DATE 4/29/70
Contingent upon modification of project agreement if additional funds are required
BY D. K. Hoover
TITLE Dist. Engineer

27 MAR 1970
U. S. BUREAU OF PUBLIC ROADS

Project Name Talbot Road - North Albany Interchange — Date DATE March 18, 1970

Highway Pacific — Contract No. 7281

County Marion and Linn — Prefix 622-1031

Contractor Slate - Hall — F. A. Project No. I-5-4(67)235

Address 7805 S. W. 40th Ave., Portland, Oregon 97219 — Order No. 34

The following work is hereby classified as "Extra Work", to be performed and paid for in accordance with the terms of contract.

Description of work to be done: Conduct test with double guard rail section at leading ends of concrete handrail on existing bridges, the tests to provide information, namely, what is the shortest radius curve involving the minimun length of curve that a standard corrugated metal guard rail can be bent, to get an immediate 10:1 slope away from the shoulder line, without deforming the corrugations to the point that satisfactory nesting of double guard rail section would not be accomplished, and result in an unsightly rail; also to provide information as to what length section of rail could be bent to a satisfactory ~~length~~ shape to fit the varied conditions existing at the end of the bridge rails because of varied bridge rail design within the limits of the project.

Location by station numbers:

Throughout the project. Stations 632+00 to 1049+00.

NOTED
F. B. KLABOE

Estimate of quantities and cost:

Material	$120.00
Labor	80.00
Equipment	80.00
Total	$280.00

Explanation: (Explain here the conditions which cause this work to be classed as "extra work")
The purpose of this test is to assist the contractor to obtain information as described under work to be done, and get a position of bend that would fit the various conditions at several bridge ends to be fitted with rail connections. A theoretical answer was available but it was considered better to provide a model to be actually viewed in the field prior to the contractor ordering the required bends. Prior approval was obtained through the Division (over)

INSTRUCTIONS: A single order should not cover more than one class of work or more than one extra work job.

Submit five copies of the order to Salem. After approval of the order by the assistant state highway engineer, the Salem office will send one copy to the contractor, one to the division engineer and one to the resident engineer.

Project authorization	$1,238,936.06
Present estimate of project cost, including $280.00 for work under this order	$1,190,391.56
Expected under-run ~~XXXXXX~~ amount	$48,544.50
Expected under-run ~~XXXXXX~~ per cent	4%

Space to right of this line is for use of Salem Office

Submitted by: L. L. MacIntyre, Resident Engineer

Approval Recommended: R. D. Bowers, Division Engineer

Approval Recommended: [signature], Construction Engineer ~~or Bridge Engineer~~

Approved [signature], ~~Deputy State Highway Engineer~~ ~~Assistant State Highway Engineer~~ Office Engineer

3-30-70

State Printing

RECEIVED
MAR 26 1970
OREGON DIVISION

RECEIVED
MAR 19 1970
CONSTRUCTION
DIVISION

CONTINUED

Contract

RECEIVED
NOV 1 1969
FOR FILING

I-5-4(67)235
7281

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
October 22, 1969

To: MEMO TO THE FILES

SUBJECT: Talbot-N. Albany Interchange
Contract No. 7281
Bureau of Public Roads Inspection - Record Keeping

On October 17, 1969, I attended a Bureau of Public Roads' inspection in depth of the record keeping procedures on theabove-named project. The inspection was conducted by the following Bureau of Public Roads Auditors: Theodore Lause, C. C. Pike and Wayne R. Schmidt. State representatives present were L. L. MacIntyre, Resident Engineer, and M. D. Glenn, Field Testing Engineer.

A review of all the project records was made and office and field personnel questioned as to procedures followed in preparing the various documents. The following findings and recommendations were commented on during the inspection.

FINDING NO. 1 - Extra Work Orders, Price Agreements(Change Orders)

Field copies in the Resident Engineer's office had not been stamped indicating they had been approved by the Bureau of Public Roads. Auditors stated' they had not found any so stamped in any of the field offices inspected so far this year. It was the understanding that, as a result of an audit report finding last year, the State's procedures were to be revised so the Resident Engineer would be notified of the Bureau of Public Roads' approval in order that proper segregation of participating and non-participating work can be made in the field. The apparent interpretation by this inspection team is that the Resident is to be furnished with a copy of the final "Stamped" Bureau of Public Roads approved copy of change orders.

A review of procedures with Construction Office personnel indicates this to be a false interpretation. The Resident is furnished with copies of change orders upon receipt of tentative approval by the Bureau of Public Roads indicating the split, if any, between participating and non-participating work. The final "stamped" approved copy if reviewed upon receipt and the Resident Engineer is notified of any changes from the original. To forward to the Residents an approved final copy of each work order is an unnecessary and costly duplication of paperwork.

FINDING NO. 2 - Lump Sum Bid Items

Documentation was not available to substantiate the payments on estimates for the lump sum items, Clearing and Grubbing and Temporary Protection and

Direction of Traffic. Instructions to field personnel regarding this were issued by letter dated September 20, 1966 by John H. Walker, Assistant Construction Engineer.

The Resident was readily able to describe the method he used to determine payments and admitted it was an oversight on his part. This is to be corrected on future estimates.

FINDING NO. 3 - Documentation of Watering used for sprinkling of trees, PA #1

The capacity of the sprinkling tank used had been determined to be 4 M-gal. Material Receipt tickets indicated that on several occasions partial loads of 2 M-gal had been placed. Inspection team questioned how these partial loads had been verified. The Resident had determined that 2 M-gal. would be sufficient and instructed the contractor and inspector that this was the total amount that would be paid for. The inspector was questioned as to how he determined the tank contained 2 M-gal. He stated water tank was full on arrival and entire contents used at contractor's discretion. As per instructions, only 2 M-gal. was paid for. Inspection team recommended such items be noted in his daily diary in future.

FINDING NO. 4 - Payrolls and Equipment Rental Reports

It was found that a carryall truck was charged to one project on an equipment rental report and the crew which normally used it was charged to a different prefix on the payroll report. This appeared to be an isolated instance attributed to a clerical error.

It was recommended the equipment rental report be maintained daily in longhand, as was the payroll report, rather than typing it up monthly.

FINDING NO. 5 - Weigh Memo - Material Receipts.

The procedures followed in the field for weighing loads of base rock, the preparation and reconciliation of the Weigh Memos and Materials Receipts were observed and found to be satisfactory.

M. D. Glenn
Field Testing Engineer

MDG:fw
cc: F. B. Klaboe
R. D. Asburry
L. L. MacIntyre

RECEIVED
OCT 22 1969
OFFICE OF
STATE HIGHWAY ENGINEER

G-1P (488 G. Posts)
G-1P (140 G. Posts)
G-1N

STATE COPY
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NOV 17 1969
OFFICE OF
STATE HIGHWAY ENGINEER

OREGON STATE HIGHWAY DEPARTMENT

APPROVED EFFECTIVE DATE 9/26/69
Contingent upon modification of project agreement if additional funds are required
BY
TITLE Dist. Engineer
DATE 10 NOV 1969, 1969
U. S. BUREAU OF PUBLIC ROADS

I-5-4(67)235 Order for Extra Work

TO BE PERFORMED ON FORCE ACCOUNT BASIS

Project Name Talbot Road - North Albany Interchange
Highway Pacific
County Marion and Linn
Contractor Slate - Hall
Address 7805 SW 40th Avenue, Portland Oregon 97219

Date October 29, 1969
Contract No. 7281
Prefix 622-1031
F. A. Project No. I-5-4(67)235
Order No. 3

The following work is hereby classified as "Extra Work", to be performed and paid for in accordance with the terms of contract.

Description of work to be done: Furnish and install standard Guide Posts, (Standard Drawing No. 2106, attached to project plans) as follows:

248	W-1
1	Y-1
379	Y-2

Remove and dispose of 628 existing damaged or inadequate guide posts which are not fit or practical to reinstall for reasons explained below.

Location by station numbers: Throughout the project.

NOTED
F. B. KLABOE

Estimate of quantities and cost:

		Estimated G-1	Estimated G-1 & G-1N
Labor	$2,300.00	1,794.00	506.00
Materials	2,800.00	2,184.00	616.00
Equipment	1,300.00	1,014.00	286.00
	$6,400.00	G-1 Est. $3,992.00	$1,408.00
		G-1 (140 @ 4.50)	630.00
		G-1N Est.	778.00
			$1,408.00

Explanation: (Explain here the conditions which cause this work to be classed as "extra work")
Item No. 33 of the contract calls for salvaging and reinstalling Guide Posts. Investigation and count of the present posts shows that 488 existing posts are aluminum which would preclude a decent job of redriving, so new standard posts will be required for replacement. Also investigation and recount shows that 140 existing posts were standard posts but are damaged beyond practical reuse and so new posts will be required for replacement. (over)

Refer to MOT Gen 11-18-69

INSTRUCTIONS: A single order should not cover more than one class of work or more than one extra work job.

Submit five copies of the order to Salem. After approval of the order by the assistant state highway engineer, the Salem office will send one copy to the contractor, one to the division engineer and one to the resident engineer.

Project authorization	$1,238,936.06
Present estimate of project cost, including $6,400.00 for work under this order	$1,185,946.06
Expected under-run amount	$52,990.00
Expected under-run per cent	4.3%

Space to right of this line is for use of Salem Office

Submitted by: [signature] Resident Engineer

Approval Recommended: [signature] Division Engineer

Approval Recommended: [signature] Construction Engineer or Bridge Engineer

Approved [signature]

The last mentioned 140 posts will be participating to the limit of the original contract amount for bid item 33, or 140 @ $4.50 = $630.00.

The recount also shows a total of 965 guide posts to be pulled and replaced, by either pulling and replacing with new post and paddle, or pulling and replacing the present post and paddle if in suitable condition. The count of present posts suitable for reinstallation is 337 and these will be handled under contract item number 33 at contract bid price. A price agreement has been made and agreed to by Contractor to change bid quantity of item number 33 from 800 to 337, and the total work and material involved in removing and replacing 628 posts and paddles is to be covered by this order.

Estimated subdivision of posts by type to be replaced by this order:

Participating		Nonparticipating	
W-1	137	W-1	111
Y-2	351	Y-1	1
		Y-2	28

Specifications for quality, location, etc. for Guide Posts refer to Standard Specifications and page 22 of Special Provisions attached to the Contract.

This work has not been done.

Prior approval received through Division Office September 29, 1969.

I-5-4(67)235

STATE COPY G-1P

OREGON STATE HIGHWAY DEPARTMENT

Order for Extra Work

TO BE PERFORMED ON FORCE ACCOUNT BASIS

RECEIVED
NOV 5 1969
OFFICE OF
STATE HIGHWAY ENGINEER

Contingent upon modification of ... last agreement if additional funds are required

BY E. J. Tallach

TITLE Dist. Engineer

DATE 5 NOV 1969

U. S. BUREAU OF PUBLIC ROADS

Project Name Talbot Road - North Albany Interchange Date October 3, 19 69

Highway Pacific Contract No. 7281

County Marion and Linn Prefix 622-1031

Contractor Slate - Hall F. A. Project No. I-5-4(67)235

Address 7805 SW 40th Avenue, Portland Oregon 97219 Order No. 2

The following work is hereby classified as "Extra Work", to be performed and paid for in accordance with the terms of contract.

Description of work to be done: Construct 150 Rods Type 2 Fence.
Remove and salvage approximately 50 Rods Type 2 Fence.

NOTED
F. B. KLABOE

Location by station numbers:

See back of sheet.

Estimate of quantities and cost:

Material for 100 rods new fence	550.00
Supplemental material to be combined with 50 rods of reusable fence material	100.00
Labor to remove 84 rods fence (662-669+90)(978+90-984+35)	168.00
Labor to install 150 rods of fence	450.00
Equipment	100.00
	1,368.00

Explanation: (Explain here the conditions which cause this work to be classed as "extra work")

Fence right of stations 662+00 to 669+90 and stations 978+90 to 984+35 has to be removed and replaced due to flattening of fill slopes. Fence at Borrow areas covered by Special Provisions. Other fence work listed not anticipated in plans. Work to be done in accordance with Standard and Supplemental Specifications as attached to the contract. This work has been started. Prior approval received thru Division Office Sept. 30, 1969. (over)

INSTRUCTIONS: A single order should not cover more than one class of work or more than one extra work job.

Submit five copies of the order to Salem. After approval of the order by the assistant state highway engineer, the Salem office will send one copy to the contractor, one to the division engineer and one to the resident engineer.

Project authorization	$1,238,936.06
Present estimate of project cost, including $1,368.00 for work under this order	$1,182,984.06
Expected under-run amount	$ 55,952.00
Expected under-run per cent	4.5%

Space to right of this line is for use of Salem Office

Submitted by: L.L. MacIntyre Resident Engineer

Approval Recommended: R.O. Rhamy Division Engineer

Approval Recommended: Construction Engineer or Bridge Engineer

Approved: Deputy State Highway Engineer 11-5-69

Location by station numbers:

Right of station 662+00 to 669+90 remove and salvage material from 50 rods of fence.
Right of station 662+00 to 669+90 Re-construct 50 rods (not covered by contract).
Right of station 978+90 to 984+35 remove 33 rods of fence (no practical salvage value).
Right of station 978+90 to 984+35 Construct 33 rods (not covered by contract)(new fence).
Left of station 962+50 to 968+50 (borrow area "B") construct 37 rods new fence - contract calls for EWO (no practical salvage value).
Left of station 971+70 to 976+00 (borrow area "C") construct 30 rods new fence - contract calls for EWO (no practical salvage value old fence).

Summary of fence installations: Type 2 fence is required at five locations:

Right station 662+00 to 669+90	50 rods	additional
Right station 978+90 to 984+35	33 rods	additional
Left station 979+00 to 987+80	58 rods	contract item number 38(not included in this order).
Left station 962+50 to 968+50	37 rods	borrow B
Left station 971+70 to 976+00	30 rods	borrow C

Fencing required for borrow B and C is to be removed at the contractor's expense. This Force Account Order to bear the expense of removing the first two listed sections of fence as well as replacement of all of the fencing except that clearly covered under the contract bid item. The use of new material as listed is determined by the observation that the existing fence is of no practical salvage value.

RECEIVED
OCT
CONSTRUCTION DIVISION
Morgan
Dasker
Bond
Walker
Jochmo
Johnson
Routing

RECEIVED
AUG 26 1969

7-31-69

FORM PR-33A (REV. 3-68) cc: OSHD (Klaboe)
Region
Wash DC

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

INITIAL INSPECTION REPORT

gyh

I-5-4(67)235

(Check Appropriate box) [XX] CONTACT [ ] PROJECT STAGE * [ ] STATEWIDE INSPECTION-IN DEPTH

REGION NO.	REPORT NO.	COUNTY	DIVISION
8 7281	1	Linn & Marion	Oregon
DATE OF INSPECTION	**INSPECTION MADE BY**		**PROJECT NO.**
7-31-69	L. P. Renz, Area Engineer		I-5-4(67)235

IN COMPANY WITH

L. L. MacIntyre, Res Engr, OSHD; J. Winer, Asst Div Engr, OSHD

LOCATION

Interstate Route I-5 North Albany Interchange north 7.9 miles to Talbot Road Interchange

CONTRACTOR NAME AND ADDRESS

Slate-Hall Construction Co., Portland, Oregon

AWARD DATE	CONTRACT AMOUNT	TIME ALLOWED	TIME STARTED	WORK STARTED
7-3-69	$1,087,276.50	265 Cal. Workdays	7-21-69	7-14-69
QUALITY OF WORK	**PROGRESS OF WORK**	**TIME ELAPSED**	**WORK COMPLETED**	
Satisfactory	Satisfactory	~ 3 %	5 %	

ROADBED (Width _____ Feet 0. to 0. of shoulders)

STRUCTURES OVER 20-FOOT SPAN

TYPE	TYPE CODE NO.	NET LENGTH (Miles)	BASE-SURFACING THICKNESS EDGE (Inches)	BASE-SURFACING THICKNESS CENTER (Inches)	BASE-SURFACING WIDTH (Feet)	TYPE	TYPE CODE NO.	NET LENGTH (Miles)

REMARKS *(Report details of statewide inspection-in-depth on form PR-33D)

TALBOT ROAD - NORTH ALBANY INTERCHANGE SECTION
PACIFIC HIGHWAY
Safety Project

This project provides for revising slopes, guardrail, sign posts, and other miscellaneous features on 7.9 miles of an existing Interstate Highway to bring the project up to present safety standards as set forth in the AASHO publication "Highway Design and Operational Practices Related to Highway Safety."

1. WORK COMPLETED:

Clearing and grubbing	10% complete
Grading	10%
Culverts	08%
Guardrail	0%
Signing revisions	0%

Orig. to Morgan 8-20-69

(more)

REPLACES PR-33A(1) REV. 5-64, WHICH WILL NOT BE USED

2. WORK IN PROGRESS:

The contractor was moving trees between the View Crest and Murder Creek Interchanges. The tree moving was almost complete at the time of this inspection.

Miscellaneous culvert installations were in progress throughout the project length.

The contractor was grading to flatten slopes between the Conners Road and South Jefferson Interchanges.

3. WORK INSPECTED:

The contractor's grading operations and the methods of handling traffic were inspected in detail.

4. EXTRA WORK ORDERS, STATE FORCE ORDERS, AND PRICE AGREEMENTS:

An extra work order will be issued to provide for the contractor to perform watering of the transplanted trees at frequent intervals between the time of transplanting and the rainy season. This measure has been recommended by the State Landscape Division. Estimated cost is $2,000. Approval is recommended as participating.

5. LABOR COMPLIANCE AND EEO:

The Resident Engineer indicates that payrolls have been submitted promptly and are in good order. An equal opportunity officer has been appointed by the contractor for this project. No equal opportunity monthly report has been filed as a full month has not elapsed since award of contract.

6. CONSTRUCTION SIGNING AND SAFETY:

Some minor infractions of the construction signing requirements of the contract were noted during the course of the inspection; however, these were corrected immediately by the Resident Engineer. Overall it is thought that adequate construction signs have been placed throughout the construction to insure safe passage of the road users.

RECEIVED
AUG 19 1969
OFFICE OF
STATE HIGHWAY ENGINEER

STATE COPY

Approved; Budget Bureau No. 41-R2089.1

MONTHLY TRANSACTION NO.	FORM PR-2 (REV. 3-66) U.S. DEPARTMENT OF COMMERCE BUREAU OF PUBLIC ROADS	STATE
8-3		Oregon
PROJECT REPORT NO.	FEDERAL-AID PROJECT AGREEMENT (PPM 21-7)	COUNTY
7	7-18-69	Linn & Marion
		PROJECT NO. I-5-4(67)235

The State, through its Highway Department, having complied, or hereby agreeing to comply, with the terms and conditions set forth in (1) Title 23, U.S. Code, Highways, (2) the Regulations issued pursuant thereto by the Secretary of Commerce and, (3) the policies and procedures promulgated by the Federal Highway Administrator relative to the above designated project, and the Bureau of Public Roads having authorized certain work to proceed as evidenced by the date entered opposite the specific item of work, Federal funds are obligated for the project not to exceed the amount shown herein, the balance of the estimated total cost being an obligation of the State. Such obligation of Federal funds extends only to project costs incurred by the State after the Bureau of Public Roads authorization to proceed with the project involving such costs.

PROJECT TERMINI

Talbot Road-North Albany Interchange Section

PROJECT CLASSIFICATION OR CLASS OF WORK	EFFECTIVE DATE OF AUTHORIZATION	APPROXIMATE LENGTH (Miles)
HIGHWAY PLANNING		
PRELIMINARY ENGINEERING		
RIGHTS-OF-WAY		
CONSTRUCTION	3-26-69	0.00
OTHER (Specify)		

FUNDS Pro Rata 92.25%

ESTIMATED TOTAL COST OF PROJECT	FEDERAL FUNDS
$ 1,211,404.00	$ 1,117,500.00

The State further stipulates that pursuant to said Title 23, Regulations, and policies and procedures, and as a condition to payment of the Federal funds obligated, it accepts and will comply with the applicable provisions set forth on the reverse hereof.

OREGON STATE HIGHWAY DEPARTMENT
(Official name of Highway Department)

By J B Kleber

Assistant State Highway Engineer
(Title)

By _____

(Title)

By _____

(Title)

U.S. DEPARTMENT OF COMMERCE

BUREAU OF PUBLIC ROADS

By L K Green
(Division Engineer)

For: R. E. Simpson

Date executed by Division Engineer JUL 18 1969

Oregon State Highway Department

Federal Aid
Project No. I-5-4(67)235 Safety

TALBOT ROAD-NORTH ALBANY INTERCHANGE SECTION

OF THE PACIFIC HIGHWAY IN MARION & LINN COUNTIES

Project Agreement Estimate

Salem, Oregon, July 9, 1969

Type Code Y006
Grading and Signing (Sta. 632+00 to Sta. 1049+00) (Contract No. 7281)

Temporary Protection and Direction of Traffic	All Required		$ 50,000.00
Clearing and Grubbing	All Required		50,000.00
General Excavation, Unclassified	8,900 cu.yd.	$1.75	15,575.00
Special Borrow Excavation, Unclassified	261,000 cu.yd.	1.75	456,750.00
Finishing Roadbed and Slopes	7.90 mile	2,000.00	15,800.00
Trench Excavation	3,200 cu.yd.	4.00	12,800.00
Special Backfill in Drains	1,000 cu.yd.	7.00	7,000.00
Watering	670 M-gal.	4.00	2,680.00
Stone Leveling Course	34,700 ton	3.10	107,570.00
Class "A" Concrete in Box Culvert	75 cu.yd.	100.00	7,500.00
Reinforcement in Box Culvert	13,000 lb.	0.20	2,600.00
12-inch Culvert Pipe	210 lin.ft.	4.00	840.00
18-inch Culvert Pipe	6,500 lin.ft.	5.25	34,125.00
24-inch Culvert Pipe	100 lin.ft.	9.00	900.00
60-inch Culvert Pipe	44 lin.ft.	32.00	1,408.00
72-inch Culvert Pipe	44 lin.ft.	56.00	2,464.00
18-inch Arch Type Pipe	50 lin.ft.	6.00	300.00
8-inch Perf Drain Pipe	4,880 lin.ft.	2.75	13,420.00
12-inch Perf Drain Pipe	3,000 lin.ft.	4.00	12,000.00
12-inch Paved Culvert End Slopes	2 only	100.00	200.00
18-inch Paved Culvert End Slopes	35 only	125.00	4,375.00
24-inch Paved Culvert End Slopes	1 only	150.00	150.00
60-inch Paved Culvert End Slopes	1 only	400.00	400.00
72-inch Paved Culvert End Slopes	1 only	500.00	500.00
Concrete Manholes	1 only	1,000.00	1,000.00
Concrete Inlets, Type G-1	11 only	175.00	1,925.00
Concrete Inlets, Type G-2	1 only	200.00	200.00
Concrete Inlets, Type G-2MA	50 only	250.00	12,500.00
Adjusting Manholes	2 only	150.00	300.00
Adjusting Inlets	1 only	150.00	150.00
Capping Inlets	1 only	50.00	50.00
A.C. Concrete Curbs	5,200 lin.ft.	1.75	9,100.00
Salvage & Reinstall Guide Posts	800 only	4.50	3,600.00
Guard Rail, Type 2	1,800 lin.ft.	2.00	3,600.00

Guard Rail, Type 2A	$ 41,400	lin.ft.	$4.30	$ 178,020.00
Guard Rail, Terminal Anchors	120	only	170.00	20,400.00
Extra for Guard Rail Bridge Connection	75	only	90.00	6,750.00
Type 2 Fence	45	rod	12.00	540.00
Roadside Seeding	70	acre	45.00	3,150.00
Grass Seed Mixture	2,100	lb.	0.90	1,890.00
Inorganic Fertilizer (22-16-8)	280	cwt.	10.75	3,010.00
Digging and Planting Trees	110	only	35.00	3,850.00
Removal of Existing Sign Installation	All Required			2,700.00
Sign Support Footings	All Required			5,100.00
Breakaway Sign Posts	All Required			26,200.00
Structure Mounts	All Required			850.00
Revise Existing Wood Posts	91	only	4.50	409.50
Type "C", "F" & "G" Signs in Place	45	sq.ft.	5.00	225.00
Move and Revise Existing Type "A" Signs	All Required			2,400.00
				$1,087,276.50
Flagging (60% of Contract's Cost)	All Required			$ 14,000.00
			Subtotal	$1,101,276.50
			10% Engr. & Cont.	110,127.50
			Total	$1,211,404.00

Length of Project 0.00 mile

SUMMARY OF FUNDS

Federal Funds	$ 1,117,500.00
State Funds	93,904.00
Total Costs	$ 1,211,404.00

SUMMARY OF COSTS BY COUNTIES

County	Total Costs	Federal Funds	State Funds
Marion (16.3%)	$ 197,459.00	$ 182,140.00	$ 15,319.00
Linn (83.7%)	1,013,945.00	935,360.00	78,585.00
	$1,211,404.00	$1,117,500.00	$ 93,904.00

State Funds for Const.: Chap. 175, Laws 1917; Chap. 31, Laws 1920; Chap. 529, Laws 1939

State Funds for Maint." Chap. 539, Laws 1939

Group 1-100%
Prefix 622-1031

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JUL 22 1969
FOR FILING

OREGON STATE HIGHWAY DEPARTMENT

I-5-4(67)235

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

7281

July 16, 1969

RECEIVED
JUL 17 1969
LEGAL & RIGHT OF WAY

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street N. E.
Salem, Oregon

Re: Talbot Rd.-N. Albany Int. Sec.
(Roadside Improvement)
I-5-4(-)235
Pacific Highway
Marion and Linn Counties

Dear Sir:

We hereby request your concurrence that design approval was given for the subject project when the Bureau of Public Roads authorized the State to advertise the following projects for bids:

1. N. Jefferson Jct. -S. P. R. R. Overcrossing Section (Grading)
   I-5-4(8)239 Authorized March 13, 1957 Completed Sept. 9, 1958

2. S. P. R. R. O'xing-Santiam Jct. Section (Grading)
   I-5-4(11)235 Authorized June 11, 1957 Completed October 28, 1958

3. N. Jefferson Jct. -N. Albany Jct. Section (Paving, S.B. Lanes)
   I-5-4(13)235 Authorized Feb. 12, 1958 Completed June 25, 1959

4. N. Jefferson Int. -N. Albany Int. Section (Paving, N.B. Lanes)
   I-5-4(52)235 Authorized Jan. 3, 1963 Completed Aug. 30, 1963

These combined projects provided four 12-foot traffic lanes of high-type pavement, 10-foot shoulders and a 76-foot median. In view of these facts and others set forth hereinafter, we are of the opinion that the intent of current PPM 20-8 has been fulfilled for the subject project which is considered as stage construction of this section of I-5, and we further request your confirmation that no further action is required for the subject project under paragraph 10 of PPM 20-8, regarding Design Approval.

The subject project is roadside improvement consisting of planting trees, shrubs and vines intermittently throughout the length of the project. This type of project, because of the kind of improvement, is incidental work to interstate projects considering present interstate standards. The subject project does not change the layout or function of connecting roads or streets or of the existing facilities, does not have an adverse effect upon abutting real property and does not require additional right-of-way, therefore does not change or alter the approved location and design of Projects I-5-4(8)239, I-5-4(11)235, I-5-4(13)235 and I-5-4(52)235, but only improves the aesthetics of this section of interstate highway.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

L. H. Young
Program and Planning Engineer

cc: F. B. Klaboe
D. J. Barbee
R. W. Ellison
B. L. Gifford
R. N. Chase

RECEIVED
JUL 17 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUL 17 1969
FOR FILING

I-5-4(67)235

7281

July 16, 1969

Slate-Hall
7805 S.W. 40th Avenue
Portland, Oregon 97219

Gentlemen:

We enclose for your files a fully executed copy of the following described contract which was awarded to you by the State Highway Commission:

Contract No. 7281 for grading and signing on the Talbot Road-North Albany Interchange Section of the Pacific Highway in Linn and Marion Counties.

A copy of this contract is also being sent to the surety on your performance bond.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

Enclosure

cc: Great American Insurance Company
Wells-Reed-Reed-Hunt Co.
Concord Surety Company
D. J. Barbee
F. D. Morgan
I. D. Marchant
R. D. Asburry
L. L. MacIntyre

RECEIVED
JUL 7 • 1969
FOR FI...

I-5-4(67)235
7281

July 3, 1969

State Hall
11455 S.W. Barbur Blvd.
Portland, Oregon 97223

Gentlemen:

The State Highway Commission today awarded to you State Highway Contract No. 7281 for grading and signing on the Talbot-North Albany Interchange Section of the Pacific Highway in Linn County.

This award was based on your bid of $1,087,276.50 which was the low bid submitted to the Commission on June 26 for this project.

Contract forms will be sent to you for execution within the next few days.

Very truly yours,

Floyd Cuery, Secretary
OREGON STATE HIGHWAY COMMISSION

cr

bc: D. J. Barbee
F. D. Morgan
I. D. Merchant
William Gaibel (SAIF)

RECEIVED
JUN 11 1969
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

6-11-69

LETTER OF APPROVAL AND/OR AUTHORIZATION

FOR FILE

PROJECT: I-5-4(67)235

SECTION: TALBOT ROAD - NORTH ALBANY INTERCHANGE

TO: MR. FORREST COOPER
STATE HIGHWAY ENGINEER
SALEM, OREGON

I-5-4(67)235 Klaboe

WORK : GRADING & SIGNING

COUNTY : LINN

FROM: R. E. SIMPSON, DIVISION ENGINEER
SALEM, OREGON

DATE PS&E APPROVED	DATE AUTHORIZED
JUNE 4, 1969	MARCH 26, 1969

YOU ARE AUTHORIZED TO PROCEED WITH THE WORK CHECKED BELOW:

- ○ CONSTRUCTION - ADVERTISE FOR BIDS.
- ○ RIGHT OF WAY.
- ⊗ OTHER (SPECIFY). AFTER AWARD CONCURRENCE YOU ARE AUTHORIZED TO PROCEED WITH CONTRACTOR'S FLAGGING IN THE AMOUNT OF $14,000.00 TOTAL AS SHOWN IN THE REVISED PS&E ESTIMATE.
- ○ UTILITY ADJUSTMENT.
- ○ RIGHT OF WAY INCIDENTALS AND RELOCATION PAYMENTS.

REMARKS AND LIMITS OF AUTHORITY:

MR. L. H. YOUNG'S JUNE 2, 1969 REQUEST AND CERTIFYING STATEMENTS ARE ACCEPTED.

REVISED PS&E DOCUMENTS FOR THE SUBJECT PROJECT HAVE BEEN REVIEWED AND ARE HEREWITH APPROVED. THE INITIAL PS&E DOCUMENTS WERE APPROVED AND AUTHORIZATION TO ADVERTISE WAS GRANTED ON MARCH 26, 1969 AS THE DEVER ROAD - NORTH ALBANY INTERCHANGE SECTION. HOWEVER, ALL BIDS RECEIVED ON APRIL 17, 1969 WERE REJECTED.

A SIGNED COPY OF THE TITLE SHEET IS RETURNED HEREWITH.

6-11-69

OFFICE USE

Young w/enc.

RECEIVED
JUN 10 1969
OFFICE OF
STATE HIGHWAY ENGINEER

NOTED
F. B. KLABOE

DATE	SIGNATURE OF APPROVING OFFICIAL	TITLE
6-5-69	R. E. SIMPSON	DIVISION ENGINEER

RECEIVED
APR 29 1969

Memorandum

I-5-4(67)235 Klaboe
7281

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

DATE: April 23, 1969

In reply refer to: 08-35-EC

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-5-4(67)235
Dever Road - North Albany Section
Safety Project

We concur in your rejecting the bids on the subject project. The low bid exceeded the engineer's estimate by 40.9 percent.

We strongly urge that this project be redesigned and readvertised as soon as possible so this safety work can be completed at the earliest possible date.

Barbur - Query - Young
By Asst. State Hwy. Engr.
Sent 4-25-69

RECEIVED
APR 24 1969
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
APR 22 1969
FOR FILING

Theodore Bruno, Member
-Portland

I-5-4(67)235
7281

April 22, 1969

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage St., N. E.
Salem, Oregon

Dear Sir:

Concurrence is requested in rejecting the bids received April 17, 1969 for the Lewer Road-North Albany Interchange Section, Project No. I-5-4(67)235.

We received two bids on this project, the low bid from Slate and Hall of Portland in the amount of $763,736.50 is 40.9% above our engineer's estimate of $541,980.50. We are rejecting the bid because it is considered too high for the Highway Commission to accept.

We plan to redesign the project, hopefully to interest more bidders; this will include extending it to the north to take in the deep median areas that have been cleared by our maintenance forces and placing guardrail in selected areas.

Two copies of the bid tabulations are attached and if further information is needed please advise.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

L. H. Young
Program and Planning Engineer

DAR:jb

cc: F. B. Klaboe
D. J. Barbee
C. H. Maison
R. H. Chase

RECEIVED
APR 8 - 1969
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

4-4-69

FOR FILE G

LETTER OF APPROVAL AND/OR AUTHORIZATION

TO: MR. FORREST E. COOPER STATE HIGHWAY ENGINEER SALEM, OREGON I-5-4(67)235	PROJECT: I-5-4(67)235 SECTION: DEVER ROAD - NORTH ALBANY INTERCHANGE WORK: GRADING & SIGNING COUNTY: LINN

FROM:	DATE PS&E APPROVED	DATE AUTHORIZED
R. E. SIMPSON, DIVISION ENGINEER SALEM, OREGON	MARCH 26, 1969	MARCH 26, 1969

YOU ARE AUTHORIZED TO PROCEED WITH THE WORK CHECKED BELOW:

- (X) CONSTRUCTION - ADVERTISE FOR BIDS.
- ( ) RIGHT OF WAY.
- (X) OTHER (SPECIFY). AFTER AWARD CONCURRENCE YOU ARE AUTHORIZED TO PROCEED WITH CONTRACTOR'S FLAGGING SHOWN IN YOUR ESTIMATE IN AMOUNT OF $9,000.00
- ( ) UTILITY ADJUSTMENT.
- ( ) RIGHT OF WAY INCIDENTALS AND RELOCATION PAYMENTS.

REMARKS AND LIMITS OF AUTHORITY:

MR. YOUNG'S MARCH 24, 1969 REQUEST AND CERTIFYING STATEMENTS ARE ACCEPTED. PS&E DOCUMENTS FOR THE SUBJECT PROJECT HAVE BEEN REVIEWED AND ARE HEREBY APPROVED.

A SIGNED COPY OF THE TITLE SHEET IS RETURNED HEREWITH.

4-7-69

RETURNED BY
Young
BY ASST. STATE HWY. ENGR

NOTED
F. B. KLABOE

RECEIVED
APR 7 1969
OFFICE OF
STATE HIGHWAY ENGINEER

OFFICE USE

DATE	SIGNATURE OF APPROVING OFFICIAL	TITLE
4-4-69	R. E. SIMPSON	DIVISION ENGINEER

RECEIVED
APR 1 1969

Memorandum

FOR FILING
I-5-4(67)235

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

DATE: March 26, 1969

In reply refer to: 08-35-DB

SUBJECT: Oregon Project I-5-4(67)235
Dever Road-North Albany Interchange Section
Pacific Highway

This memorandum will confirm conversations of March 25, 1969 between Messrs. Barbee, Galloway, Sample and Daniels of your office and Messrs. Valach and Renz of my staff.

On subject project it was mutually agreed to change the following:

1. Special Provision 7-21 Public Safety and Convenience

The provision should be more restrictive as to the allowance of the contractor to close one traffic lane in each direction. These closures should be of short duration, should not be allowed when traffic volumes are high and should be allowed only as approved by the Resident Engineer.

2. Special Provision 731-2.9 Use of Salvaged Materials

This provision should be changed to allow use of salvaged guard-rail members at the contractor's option.

Also discussed was the addition of two new signs, Nos. 3 and 17 on the plans, which provide for the placing of the Interstate Route shield and the U.S. Route marker on a sign background. Mutual agreement was not reached; however, you are requested to have these new signs deleted by addendum before award or price agreement after award of contract, since these signs are not in accordance with the Interstate Sign Manual and cannot be allowed.

RETURNED TO
By Asst. State Hwy. Engr.
3-28-69

RECEIVED
MAR 27 1969
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
FEB 14 1969
GAME
COMMISSION

I-5-4(67)235
7281

STATE OF OREGON
1859

OFFICE OF THE DIRECTOR

P. O. BOX 3503 • 1634 S.W. ALDER ST. • PORTLAND, OREGON • 97208 • Ph. 222-9611

TOM McCALL
GOVERNOR

COMMISSIONERS
J. PAT METKE, Chairman
JOSEPH W. SMITH, Vice Chairman
JOHN P. AMACHER, Member
GEORGE L. HIBBARD, Member
JAMES W. WHITTAKER, Member

P. W. SCHNEIDER
State Game Director

February 13, 1969

Routing

Earbee
Hall
1 A. Olson JC
Sample
Terpin
Swenson

RECEIVED
FEB 14 1969
DESIGN
DIVISION

Trout T
Wills
Hackleman
Scott
R. Olson
Carstenson

State Highway Engineer
State Highway Department
Highway Building
Salem, Oregon 97310

Attention: Mr. D. J. Barbee

Dear Sir:

This is in reply to your letter of February 7, 1969 which enclosed plan title sheets for the following five projects.

1. Route I-5 Breakaway Sign Project

2. Route I-80N Breakaway Sign Project
   Old Oregon Trail and Columbia River Highways - Ten Counties

3. Dever Road-North Albany Interchange Section
   Pacific Highway - Linn County

4. Oak Grove Safety Rest Area
   Pacific Highway - Linn County

5. Grants Pass-Evans Creek Section
   Pacific Highway - Josephine County

There will be no conflict with wildlife resources as a result of this construction, and the projects are approved.

Very truly yours,

JOHN W. McKEAN
DIRECTOR

By R. O. Koski

R. O. Koski
Chief of Liberations

cc: F. B. Klaboe
L.H. Young
G. C. Wills
F. E. Terpin
T. C. Roake
C. T. Keasey
J. F. Putnam
A. F. Parson
A.E. Johnson
L.W. Rulien
R.D. Asburry

ROK:ls

RECEIVED
FEB 18 1969
FOR FILING
I-5 4(67) 135
7281

February 6, 1969

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage St., N. E.
Salem, Oregon 97301

Dear Sir:

We are submitting program data for 16 interstate Projects, Items 555 thru 570, which we desire to have included in the Federal-Aid Interstate Highway Program.

Items Nos. 555 thru 561 will be one contract and Items Nos. 562 thru 567 will be another. We presently intend to receive bids on all of the projects listed at our March 20, 1969 bid opening.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

L. H. Young
Program & Planning Engineer

DAR:bb

MONTHLY TRANSACTION NO.

DATE SUBMITTED TO W. O.

FORM PR-1 (REV. 4-61)

FEDERAL-AID PR

(PPM 21

| | | |

Budget Bureau No. 41-R2067; Approval Expires February 28, 1966

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

FEDERAL-AID PROGRAM DATA

(PPM 21-1)

		PRESENT	FUTURE	YEAR	REGION	STATE NAME	STATE CODE	APPN CODE	ITEM NO.
(65)	ADT	21,200	41,000 (70)	89 (71) (72)	08	Oregon	35 (2) (3)	042 (4) (9)	570 (14) (18)

(66)	SUPV AGCY (69)	DA CLASSIF. (70)	DA AREA (71)	EMERG. YR. (72) (73)	PL. AUTH YR (74) (75)	PROJECT NUMBER PREFIX LETTER(S) 14 23	NUMBER 7 13	SEQ. NO.	I. Projects Only POST MI. (24) (26)	DESIG. 27
						I-	5-4(67)		235	

COUNTY NAME: Linn — CODE: 043 (14) (18)

ROUTE NO. I — FEDERAL-AID: I-5 (32) — STATE (36) (37) — U.S.: I-5 (41)

PROGRAM STAGE: [ ] 1 OR [X] 2

MILES (54) (58)	ESTIMATED PROJECT COST BY PHASES: TOTAL ESTIMATED COST (59) (66)	FEDERAL FUNDS (67) (76)	STATE FUNDS	OTHER FUNDS	CHARACTER OF PROPOSED WORK (Full description)
					Install and reconstruct guard rail, flatten slopes, revise median, signing and landscaping.
4.94	600,000	550,000	50,000		
4.94	600,000	550,000	50,000		
(16)	(23)	(34) (35)			

REMARKS

This project qualifies as a safety improvement under PPM 21-16 to reduce or eliminate the potential traffic hazard of steep shoulder slopes and guard rail close to the shoulders.

USCOMM DUSCOMM-DC 48908-P61

7910-502 Foster Truck Scale Section, of 1969
Santiam Highway, E. of Sweet Home
#7282 (Slide correction)

RECEIVED
DEC 16 1969
FOR FILING
2910-502
7282

December 16, 1969

Federal Insurance Company
Bonding Department
437 Norton Building
Seattle, Washington 98104

Gentlemen:

A post-final payment for $81.74 will be made to Floyd Cruin Construction Company on Contract No. 7282 for the slide correction on the Porter Creek Scale Section of the Santiam Highway in Linn County as soon as the warrant is prepared.

The total amount paid on this contract will be $48,996.37 including the post-final payment. Of the total $4858.14 is for force account.

Very truly yours,

Floyd Cuny, Secretary
OREGON STATE HIGHWAY COMMISSION

Cm

cc Floyd Cruin Construction Co.
P. O. Box 215
Lebanon, Oregon 97355

Victor A. Kisley
800 Board of Trade Building
Portland, Oregon 97204

Frank Morgan
Ivan Merchant
V. E. Skoog
Attn: John Kerr

R. D. Asbury

RECEIVED
DEC 2 - 1969
FOR FILING

7910-502

7282

December 1, 1969

Federal Insurance Company
Bonding Department
427 Norton Building
Seattle, Washington 98104

Gentlemen:

A post-final payment for $525 will be made to Floyd Gruhn Construction Company on Contract No. 7282 for slide correction on the Foster Creek South Section of the Santiam Highway in Linn County as soon as the warrant is prepared.

The total amount paid on this contract will be $62,873.63 including the post-final payment. Of the total $800.14 is for force account work.

Very truly yours,

Floyd Oxley, Secretary
OREGON STATE HIGHWAY COMMISSION

fhs

cc Floyd Gruhn Construction Co.
P. O. Box 215
Lebanon, Oregon 97355

Victor A. Kisley
600 Board of Trade Building
Portland, Oregon 97204

Frank Morgan
Ivan Merchant
V. E. Skeag
Attn: John Herr
R. D. Ashcroft

RECEIVED
DEC 24 1969
FOR FILING

7910-502
7282

3g
13

November 26, 1969

Floyd Graham Construction Co.
P. O. Box 215
Lebanon, Oregon 97355

Gentlemen:

The State Highway Commission at its meeting on November 18, 1969, considered your request for an extension of 10 days on Contract No. 7282 for slide correction on the Foster Truck Scale on the Santiam Highway in Linn County.

Careful consideration was given to the reasons you submitted. However, in light of the available facts and the provisions of the contract, the Commission granted you a seven-day extension which will delete all liquidated damages.

If there are pertinent facts which have not yet been considered, you should contact the Resident Engineer, the Division Engineer, or the Construction Engineer in the Salem Office.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

By
C. W. Head, Assistant Secretary

cc

bc: F. D. Morgan
V. E. Skoog
R. D. Asburry
Keats Oliver

FORM E-20 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
October 20, 1969

SUBJECT: Foster Truck Scale
Contract No. 7282
Time Extension

To:
Mr. F. B. Klaboe
Assistant State Highway Engineer
BUILDING

Floyd Grahm Construction Company has requested a 10-day extension of time because of a delay in burning of debris due to wet weather in late September.

The debris burning to which the contractor refers was a part of some extra clearing work. We have agreed to a Price Agreement to cover the cost of clearing a strip of right of way which was not clearly a part of the contract work at the time of bidding. The contractor could not burn this material during the fire season and then the heavy rains of late September further delayed disposal of the debris.

We find there is another valid reason for extension. Bids on this project were opened June 26 but because of a right of way delay, the contract was not submitted until July 25, or 9 days longer than the specifications permit.

The project was completed September 26 with 7 days liquidated damages accrued at the rate of $75 per day for a total of $525. We recommend a 7-day time extension which will delete all liquidated damages. This is a State project reimbursable by the Corps of Engineers. A rough draft letter to the Highway Commission is attached.

F. D. Morgan
Construction Engineer

By John A. Bond
John A. Bond
Construction Administration Engineer

JAB:fw
Enc.
cc V. L. Gallagher

RECEIVED
OCT 23 1969
OFFICE OF
STATE HIGHWAY ENGINEER

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7282 Contractor Floyd Grahm Construction Co.

Highway Santiam

Section Foster Truck Scale

Kind of Work Slide Correction

It is recommended that the request for increase in the number of workdays within which to complete said contract be ~~DENIED~~ GRANTED. The reasons for such recommendation are as follows:

Recommend 7 days for extra clearing and delay in submission of the contract.

Recommended for Approval:

Division Engineer

John A. Bosch
for
Construction Engineer or Bridge Engineer

J. B. Klabre
Assistant State Highway Engineer

Contract No.

Project designation
State-Federal

Date awarded

Work started

Per cent completed

No. of Workdays Allowed

No. of Workdays Used

No. of Added Workdays Requested

RECEIVED
FEB 30 1950
DEPT. OF HIGHWAYS
SALEM, OREGON

B-220 (Rev.)—6M—8-64

OREGON STATE HIGHWAY COMMISSION

RECEIVED
SEP 30 1969
KEATS OLIVER
RES. ENGR.

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon 97310

Date Sept. 27, 19 69

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 45 days to 55 days, within which to complete our Contract No. 7282, without the assessment of liquidated damages. The said contract is described as follows:

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

Weather conditions prohibited burning of debris
We site Section 8, article 8-8 and 8-7 of "Standard Specifications for Highway Construction" in making this request.

Respectfully submitted,

Floyd Grahm Construction Co.
Contractor

By Floyd Grahm
Floyd Grahm, President

CONSENT OF SURETY

Date September 29, 19 69

We, FEDERAL INSURANCE COMPANY

, as surety on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

BY Victor S. Risley
Attorney-in-fact
Victor S. Risley

VICTOR S. RISLEY CO. (SEAL)

BY: Victor S. Risley
Resident Agent

RECEIVED
NOV 24 1969
FOR FILING

7210-502
7282

November 21, 1969

Oregon State Highway Commission

Gentlemen:

Work was completed September 26, 1969, on Contract No. 7282. The contract was with Floyd Graham Construction Company and was for slide correction on the Foster Truck Scale Section of the Santiam Highway in Linn County.

As the contractor has completed all work according to specifications, I recommend that you accept the project effective November 21, 1969, and that you concur in this procedure at the Commission meeting on December 23.

It is assumed that if you have no objections to this action and you do not advise me to the contrary, I may consider the matter has your approval.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

cc: Floyd Query
Tom Edwards
Victor D. Wolfe
F. B. Klaboe
V. E. Skoog
Ivan Merchant
F. D. Morgan
L. H. Young
R. D. Asburry

srb sr

RECEIVED
NOV 21 1969
FOR FILING
7910-502
7282

November 21, 1969

Federal Insurance Company
Bonding Department
417 Norton Building
Seattle, Washington 98104

Gentlemen:

Contract No. 7282 awarded to Floyd Grahm Construction Co. for slide correction on the Foster Trunk Scale Section of the Santiam Highway in Linn County was completed on September 26, 1969, and accepted by the Highway Commission on November 21, 1969.

Final payment in the amount of $3,478.06 will be released to the contractor after December 1, 1969. The total contract amount is $62,348.63 including $600.14 for work performed under force account.

No claims for labor or material have been filed with us.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

or

cc: Floyd Grahm Construction Co.
P. O. Box 215
Lebanon, Oregon 97355

Victor S. Risley
930 Board of Trade Bldg.
Portland, Oregon 97204

Frank Morgan
Ivan Merchant
V. E. Skoog
Attn: John Herr
R. D. Asburry

RECEIVED
NOV 4 - 1969
FOR FILING

7910-502
7282

November 3, 1969

Oregon State Highway Commission

Gentlemen:

Request for Extension of Time
No. 13
November 18, 1969 meeting

Floyd Grahn Construction Company has requested a 10-day time extension on the Foster Truck Scale slide correction project on the Santiam Highway, Contract No. 7282, in Linn County. The contractor cites a weather delay in disposing of clearing debris.

The contractor was required to do more clearing than was originally planned and some of it could not be burned until late in the season. Another valid reason for extension is a delay in submission of the contract to the contractor after the bids were opened. This was due to a right-of-way delay and justifies a nine-day extension.

The project was completed September 26 with seven days liquidated damages accrued in the amount of $525. I recommend a seven-day extension which will delete all liquidated damages. This is a State project.

This matter will be on the agenda for your consideration at the November 18 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

JAB:fw sr

cc: Floyd Quary
F. B. Klaboe
V. D. Wolfe
V. E. Skoog
F. D. Morgan
R. D. Asburry

7910-502

FORM 851 (REV 12-66)

OREGON STATE HIGHWAY DEPARTMENT

FIELD ENGINEER'S WEEKLY REPORT

FOR CONSTRUCTION PROJECTS ONLY
CONSTRUCTION AND BRIDGE DIVISIONS

SECTION: Foster Truck Scales	WEEK ENDING: November 1, 1969	
	SECTION PREFIX: 7910-502	
HIGHWAY: Santiam	COUNTY: Linn	
NAME OF JOB: Foster Truck Scales Section	KIND OF WORK: Slide Correction	
CONTRACTOR: Floyd Grahm Const. Co.	CONTRACT NUMBER: 7282	FEDERAL AID PROJECT NUMBER: state
DATE OF CONTRACT: 7/25/69	DATE WORK STARTED: 7/30/69	ESTIMATED COMPLETION DATE:
AVERAGE FORCE ON PROJECT FOR THE WEEK: MEN: SUPERVISION:	SPECIFIED WORK DAYS	WORK DAYS USED
	SPECIFIED CALENDAR DAYS 45	CALENDAR DAYS USED 52
PROJECT AUTHORIZATION: $82,334.08	SPECIFIED COMPLETION DATE	PERCENT OF TIME ELAPSED 116
EXCLUSIVE OF ENGINEERING: $75,143.33	ENGINEERING AUTHORIZATION $7,190.73	PERCENT OF CONTRACT COMPLETED BASED ON ESTIMATED COST 100
ESTIMATED COST OF COMPLETED PROJECT, EXCLUSIVE OF ENGINEERING: $64,636	ENGINEERING COST TO DATE $6,550	PERCENT OF CONTRACT COMPLETED BASED ON TOTAL AUTHORIZATION 86
ESTIMATED PERCENT: OVERRUN / UNDERRUN -14 %	PERCENT OF AUTHORIZATION 91 %	DATE PROJECT WAS COMPLETED: Sept. 26, 1969

semi-final submitted 10/28/69

ESTIMATED PERCENT COMPLETE (ROADWORK)

CLEARING	DRAINAGE	GRADING	BASE	OIL AND/OR PAVE.	MAT'L. PROD.		
100	100	100	100				

	GRADING	SURFACING	MAINTENANCE MATERIALS	OIL & BITUMINOUS MACADAM	PAVING
MILES IN PROJECT					
MILES PARTIALLY COMPLETED					
MILES COMPLETED					
TOTAL ESTIMATED QUANTITIES (CONTRACT)	51,420 cy	100 cy			
TOTAL QUANTITIES CORRECTED TO DATE	41,939	141			
ESTIMATED QUANTITIES MOVED OR PLACED TO DATE	41,939	141			
AVERAGE DAILY QUANTITIES					
AVERAGE DAILY QUANTITIES NECESSARY TO COMPLETE PROJECT ON TIME					
NUMBER OF SHIFTS PER DAY					
HOURS PER SHIFT					

EQUIPMENT USED DURING THE WEEK:

ESTIMATED PERCENT COMPLETE (STRUCTURES)

BRIDGE NO.								
PERCENT								

	WEATHER	WORK DAYS CHARGED	HOURS DELAY	CAUSE OF DELAY
SUNDAY				
MONDAY				
TUESDAY				
WEDNESDAY				
THURSDAY				
FRIDAY				
SATURDAY				

Routing

Morgan — Peace

Bond — Swan

Walker — Glenn

Boehme — Litchfield

Johnsen — Gallagher

Stein

RECEIVED
NOV 3 1969
CONSTRUCTION
DIVISION

BEN GIFFORD

NOTED
R. D. CHURCH

GENERAL DESCRIPTION OF ACTIVITIES FOR THE WEEK

SUNDAY	
MONDAY	
TUESDAY	
WEDNESDAY	
THURSDAY	
FRIDAY	
SATURDAY	

REMARKS

Project complete. Semi-final submitted to Division office Tuesday 10/28/69

FINAL REPORT

SIGNED Keats Oliver LOCATION Albany

PRIME RESIDENT SUBMIT 2 COPIES. WHEN BRIDGES AND GRADING BOTH ARE INVOLVED, SUBMIT 3 COPIES.

DP-F216

RECEIVED
SEP 2 - 1969
FOR FILING

7910-502

7282

August 27, 1969

Floyd Graham Construction Co.
P. O. Box 215
Lebanon, Oregon 97355

Gentlemen:

We enclose for your files a fully executed copy of the following described contract which was awarded to you by the State Highway Commission:

Contract No. 7282 for slide correction on the Foster Truck Scale Section of the Santiam Highway in Linn County.

A copy of this contract is also being sent to the surety on your performance bond.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

sj

Enclosure

cc Federal Insurance Company
Victor S. Risley
D. J. Barbee
F. D. Morgan
I. D. Merchant
R. D. Asbury
Keats Oliver

RECEIVED
SEP 26 1969
FOR FILING

7910-502

7282

July 25, 1969

Floyd Grahm Construction Co.
P. O. Box 215
Lebanon, Oregon 97355

Gentlemen:

The State Highway Commission on July 3, 1969, accepted your proposal for slide correction on the Foster Truck Scale Section of the Santiam Highway in Linn County for the sum of $69,207.50 and referred it to the State Highway Engineer with authority to award the contract as soon as necessary right-of-way is acquired.

Clearance has been received and the State Highway Engineer today awarded you the project, which has been assigned Contract No. 7282.

Enclosed are three copies of this contract. Two of these copies should be signed on the contract and bond pages and returned to this office for completion. Please follow exactly the instructions given on the blue slip attached to the contract.

The third copy of the contract stamped "Advance Copy to be Retained by Contractor" is furnished for your information pending receipt of a fully executed copy.

The calendar workday count on this contract will begin August 4, 1969.

Very truly yours,

Floyd Gaery, Secretary
OREGON STATE HIGHWAY COMMISSION

By
C. W. Read, Assistant Secretary

cr
Enclosures

bc: Pacific Builder & Engr., Inc., Seattle, Wash.
Daily Journal of Commerce, Seattle, Wn., & Portland, Ore.
Frank Morgan
D. J. Barbee
I. D. Merchant
William Geibel (BAIF)
R. D. Asbury
Keats Oliver

RECEIVED
JUN 9 1969
DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA
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7282

DEPARTMENT OF THE ARMY
PORTLAND DISTRICT, CORPS OF ENGINEERS
P. O. BOX 2946
PORTLAND, OREGON 97208

3 June 1969

Mr. Forrest Cooper
State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310

6-6-69
REFERRED TO
Young - Barbur - Quay
Dy Asst. State Hwy. Engr.

Dear Mr. Cooper:

Reference is made to your letter of 28 April 1969 concerning Foster Slide Correction under the Deferred Maintenance Provisions of Contract No. DA-35-026-CIVENG-65-418.

The work outlined in the referenced letter for units A, B and C is within the scope of Article 3b of the above contract.

You are authorized to advertise and award the proposed construction contract at an overall cost of approximately $115,000 including right-of-way and engineering costs.

Sincerely yours,

ROBERT L. BANGERT
Contracting Officer

1 Incl
Cpy ltr dtd 4-28-69

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STATE HIGHWAY ENGINEER

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7910-502
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April 28, 1969

District Engineer
Corps of Engineers
Post Office Box 2946
Portland, Oregon 97208

Attention Mr. Bill Donner

Dear Sir:

Re: Slide Correction, Contract No. DA-35-026-CIVENG-65-418
Foster Reservoir Project (See Bangert's letter of March 7, 1969)

Attached are sketches of the approximate limits of this work. Detailed plans will be submitted to you as soon as they are prepared. All that is available now are the above-mentioned sketches and the preliminary field plans. If necessary, you can inspect the latter or we will make prints.

You requested the following estimate information so you can give us a supplemental agreement in time for our May 28 Highway Commission meeting and in time to receive bids June 26:

Unit "A" 1053+60 to 1067+75 Bid Items	$83,850
Unit "B" 1040+80 to 1042+60 Bid Items	275
Unit "C" 1027+80 to 1030+40 Bid Items	1,375
Flagging	1,000
Seed and Mulch	1,700
	$88,200
Contingencies 4½%	3,969
TOTAL*	$92,200

*This does not include engineering work or right-of-way.

Your early authorization of our proceeding with this contract would be appreciated. We do wish to thank you for your courtesy and cooperation on work to date toward achieving this correction.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

F. B. Klaboe
Assistant State Highway Engineer

cc: Forrest Cooper
R. L. Porter
D. J. Barbee
L. H. Young

GW:lf
(DJB/bdr) srb

Protect Access to Reservoir, Maintain Channel Outlets, & Preserve Roadside Trees

T.13S., R.2E. W.M.
10C-46-17

FOSTER

BORROW AREA

LAKE

SEE 6B-10-1 FOR PRIOR R/W

WASTE AREA

Lot 1

U.S.A. 236-161

U.S.A. 236-161

Lot 2

D. F. D. Ashton 306-139

Timber Service Co. 305-827

Verified with Corps of Engineers information known.

T.13S., R.1E. W.M.
T.13S., R.2E. W.M.

42150 0.9 Ac.

42159 2.3 Ac.

10° C.P. Δ: 91°N R: 161.05'

105+00

109+50

110+62.29 P.T.

111+29 P.C.

111+91.68 P.T.

N.E. 1/4 Sec. 12 T.13S. R.1E. W.M.

N.E. 1/4 Sec. 7 T.13S. R.2E. W.M.

N.E. 1/4 Sec. 12 T.13S. R.1E. W.M.

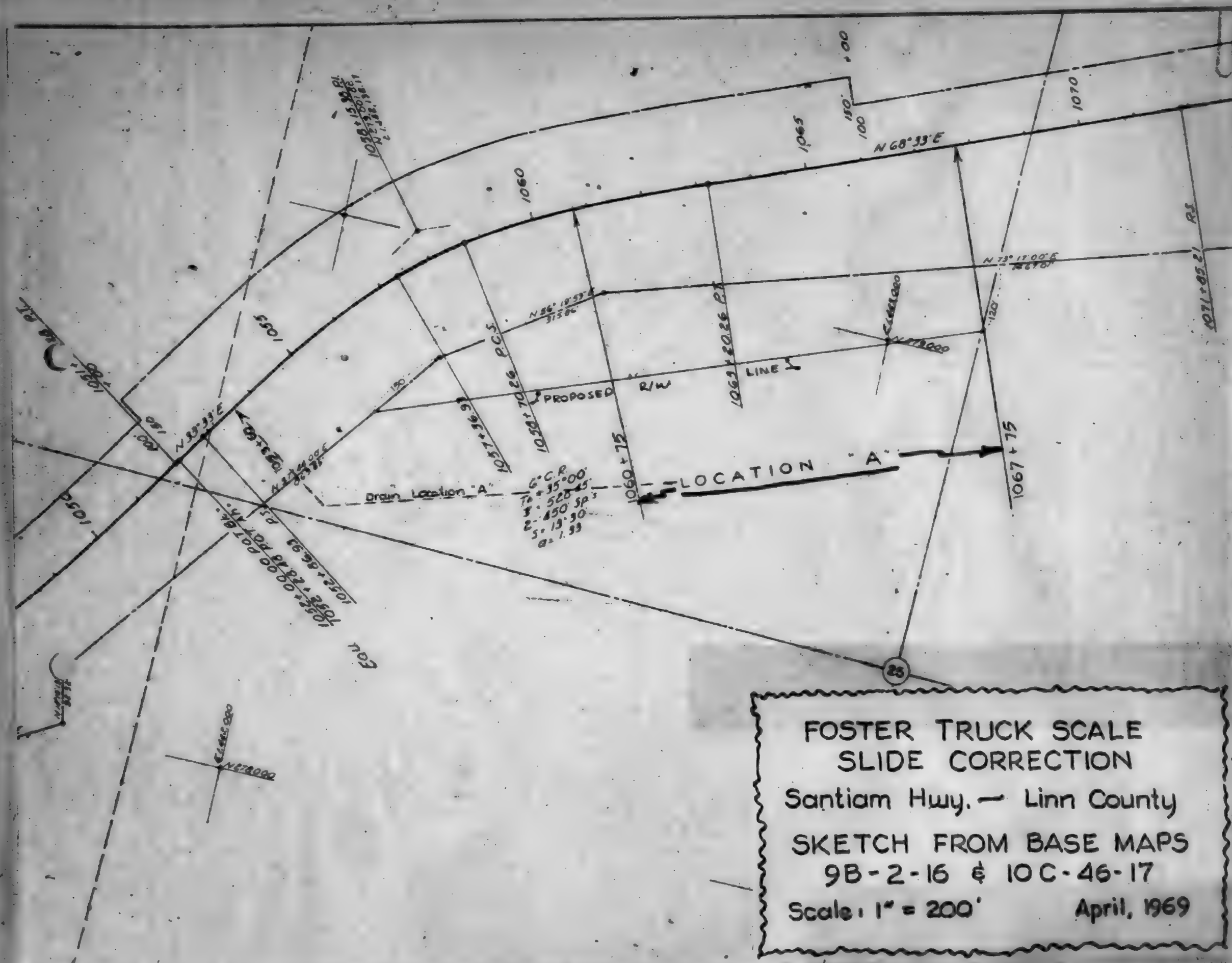
6° C.L. Δ: 18°36' R: 156.30'

FOSTER TRUCK SCALE
SLIDE CORRECTION

Santiam Hwy. — Linn County

SKETCH FROM BASE MAPS
9B-2-16 & 10C-46-17

Scale: 1" = 200' April, 1969


N 68°33'E
1065
1060
1055
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1071+05.21
RS
N 73°17'00"E
N 56°18'53"E
315.06'
1057+36.9
1058+70.26 P.C.S.
1061+20.26 P.T.
PROPOSED R/W LINE
LOCATION "A"
1060+75
1067+75
Drain Location "A"
Δ = 35°00'
T = 520.45'
L = 450 SP's
E = 13.30'
D = 1.33
N 39°33'E
N 21°54'00"E
263.37'
1056+66.91
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FOSTER TRUCK SCALE
SLIDE CORRECTION

Santiam Hwy. — Linn County

SKETCH FROM BASE MAPS
9B-2-16 & 10C-46-17

Scale: 1" = 200' April, 1969

N

Existing U.S. Hwy. No. 20

26 — 25

N 89°30'E
C 1860.30 ft

1027+32.28 P.S.C.

1032+32.28 P.S.C.

1037+32.28 P.S.C.

S 65° 31' E

BOUNDARY

S 87° 48.5' E
96.33

1027+80

LOCATION "C"

1030+40

1030

1035

1040

S 11° 07 05" E
335.12

N 82° 25 5" E
132.12

S 31° 18' E
96.53

N 65° 36 01" E
393.05

N 60° 25 55" E
188.53

N 60° 25 55" E
388.00

1040+80

LOCATION "B"

1042.70

R = 800.00' C.L.
D = 8° 36'
T = 167.00'
L = 300 Sp's
S = 10° 30'
D = 8667

48544
535 Ac. 78.61

RECEIVED
MAR 17 1969
3

PORTLAND DISTRICT, CORPS OF ENGINEERS
P. O. BOX 2946
PORTLAND, OREGON 97208

7-970-502
NPPEN-DB-2
7282

7 March 1969

Mr. Forrest Cooper
State Highway Engineer
Oregon State Highway Department
Salem, Oregon 97310

Dear Mr. Cooper:

We received and concur with your letter of 28 February 1969 concerning slide correction under Contract No. DA-35-026-CIVENG-65-418, Foster Reservoir Project.

Your proposal with cost of corrective action for the easterly slide should be submitted for our approval prior to advertisement. Action on the westerly slide should be limited to the study only. Funds are available for the design portion at this time and additional funds are being requested to cover cost of the proposed contract for the easterly slide area.

Sincerely yours,

Lt.Col.CE

ROBERT L. BANGERT
Colonel, Corps of Engineers
for District Engineer

NOTED
F. B. KLABOE

3-17-69 dig to
REFERRED TO
Young - Barber
By Asst. State Hwy. Engr.

Barber - plan process

RECEIVED
MAR 11 1969
OFFICE OF
STATE HIGHWAY ENGINEER

SU-528(3) Ward Dr.-Silverton Rd. Sec., 1969
FAS-741 (Lancaster Dr.)
#7283 (Grading & Paving)

CYA 3712

24

OREGON STATE HIGHWAY DEPARTMENT

FORM A-190 (3-64)

HIGHWAY DEPARTMENT INVOICE

NO. 106085

DATE	BILLING REQ. NO.	YOUR ORDER NO.	CREDIT DISTRIBUTION
6-7-71	3C 124		501-1175-217

Contract 7283
SU-528(3)

- Marion County
- Courthouse
- Salem, Oregon 97301
-

MAKE CHECKS PAYABLE TO
THE OREGON STATE HIGHWAY DEPARTMENT

SEND REMITTANCE TO:
OREGON STATE HIGHWAY DEPARTMENT
STATE HIGHWAY BUILDING
SALEM, OREGON 97310

DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
Attention: John Anderson, Director of Public Works			
Final Billing: Silverton Road - Ward Drive Section, Lancaster Drive, FAS 741. Covered by agreement dated October 1, 1969.			
County Advance Deposit		65,600.00	
Amount previously transferred		50,000.00	
			15,000.00
County share of construction costs		59,050.78	
Amount previously transferred		50,600.00	
			8,450.78
To be Refunded			6,549.78

ACKNOWLEDGMENT OF BILLING REQUEST

Cash Received in Payment

RECEIVED
COUNTY & CITY SECTION
JUN 8 - 1971
ENGR. COOR. GE RE UE
UPE GE RE RPS

RECEIVED
JAN 22 1970
FOR FILING

SU-528(3)

7283

January 22, 1970

Fidelity and Deposit Company
of Maryland
900 Failing Building
Portland, Oregon 97204

Gentlemen:

Contract No. 7283 awarded to D and D Paving, Inc., for grading and paving on the Ward Drive-Silverton Road Section of FAS 741 (Lancaster Drive) in Marion County was completed on October 28, 1969, and accepted by the Highway Commission on January 21, 1970.

Final payment in the amount of $8,115.37 will be released to the contractor after January 29, 1970. The total contract amount is $283,111.37 including $4,040.45 for work performed under force account.

No claims for labor or materials have been filed with us.

Very truly yours,

Floyd Gentry, Secretary
OREGON STATE HIGHWAY COMMISSION

fhm

cc D and D Paving, Inc.
1015 22nd Street, S.E.
Salem, Oregon 97302

Frank Morgan
Ivan Merchant
V. E. Skoog
Attn: John Herr
R. D. Asbury

RECEIVED
JAN 22 1970
FOR FILING

SU-528(3)
7283

January 21, 1970

Oregon State Highway Commission

Gentlemen:

Work was completed October 28, 1969, on Contract No. 7283. The contract was with D & D Paving, Inc., and was for grading and paving on the Ward Drive-Silverton Road Section of FAS 741 (Lancaster Drive) in Marion County.

As the contractor has completed all work according to specifications, I recommend that you accept the project effective January 21, 1970, and that you concur in this procedure at the Commission meeting on February 3.

It is assumed that if you have no objections to this action and you do not advise me to the contrary, I may consider the matter has your approval.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Query
R. L. Porter
F. B. Klaboe
V. D. Wolfe
V. E. Skoog
F. D. Morgan
L. H. Young
R. D. Asburry

srb sr

RECEIVED
JAN 27 1970
FOR FILING

SU-528(3)
7283

December 30, 1969

B and B Paving, Inc.
1215 22nd Street, S. E.
Salem, Oregon 97302

Gentlemen:

The State Highway Commission at its meeting on December 23, 1969, granted your request for a 24-day time extension, without assessment of liquidated damages, on Contract No. 7283 for grading and paving the Hard Drive-Silverton Road Section of FAS 741 (Lancaster Drive) in Marion County.

Very truly yours,

Floyd Omey, Secretary
OREGON STATE HIGHWAY COMMISSION

fm
cc F. D. Morgan
V. E. Skoog
R. D. Asbury
E. J. Hall

FORM S-30 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
December 8, 1969

To:

Mr. F. B. Klaboe
Assistant State Highway Engineer
BUILDING

SUBJECT: Extension of Time
Ward Drive-Silverton Road Section
FAS 741
Contract No. 7283

We have received from D & D Paving, Inc., contractor on the subject contract, the attached request for an increase of 24 calendar workdays. The contractor's request is based on delays caused by utility relocations, required work to repair and replace a culvert damaged during construction, installation of storm drains and mail boxes added to the contract by Price Agreements, and substitution of bad days for good.

When the contractor moved his grading equipment onto the project July 30, he was equipped to perform all of the grading (11,700 cubic yards) within a period of approximately two weeks. However, the contractor was delayed from July 30 through August 5 by telephone cable relocation work. The cable was in the grading area on the west side and although it had been recently installed, its exact location was unknown to the telephone company (it was installed by a private contractor). Since this was the only area in which it was feasible for the contractor to work at this time, an extension of 7 calendar workdays is justified.

From August 13 through August 20, telephone company splicing work, electric company moving poles and a natural gas company installing pipeline on the east side delayed the contractor's work. There were no other work areas of suitable size available to the contractor during this period and he was forced toshut down his grading operations. An extension of 7-1/2 days is justified.

From August 22 through August 26, the contractor's surfacing crew was delayed by County forces installing sanitary sewers which were not a part of the contract. This work by the County was started without any advance notice to the contractor or the State. The contractor did have some work which he was able to pursue during this period, and an extension of one-half of the time is reasonable or 2-1/2 days.

On August 8, 1969, the contractor's equipment broke through an existing 65"x40" arch type metal pipe. Upon investigation, it was determined that County forces had weakened the culvert by installing two 12-inch culverts into 20-inch holes

in the pipe without proper backfill. The contractor had to stop his regular storm sewer work for 2 days while he replaced the damaged section under a bid item. We believe this delayed his overall completion of the project by 2 days. An extension of this time is justified.

On October 8 (the contractor refers to August 8), a Price Agreement for installation of 4-inch storm sewers behind the sidewalk was prepared. This work was done at the request of Marion County and was negotiated after the original contract time had expired. This work required 2 days, but since the contractor had other work under way, we believe an extension of 1 day is justified.

A Price Agreement for installation of mail boxes was written in August of 1969. This work could not be done until the sidewalk was completed. The work, therefore, was done after the original contract time had expired and required 2 days. An extension of this time is justified.

Time allowed on this project was 75 calendar workdays which we felt was a close minimum for a $300,000 job starting in late July. The contract records indicate that following the expiration of the specified calendar workdays on October 4, the major work remaining involved paving. This paving work was shut down at varying time at the State's request due to poor conditions for a total of 4 days. Undoubtedly, had the earlier delays not occurred, the contractor would not have been forced to interrupt his paving operations so much. We therefore feel an extension of 2 calendar workdays is justified based on a substitution of bad days for good.

This project was completed on October 28, 1969 at which time 24 calendar workdays in excess of those allowed had been charged, amounting to $2,400 in liquidated damages ($100 per day). We recommend that the calendar workdays be increased by 24 based on the reasons listed above. This will eliminate all liquidated damages.

This is a Federal-aid Secondary project and approval by the Bureau of Public Roads is not required. A rough draft of a letter to the Highway Commission is attached.

F. D. Morgan
Construction Engineer

By John A. Bond

John A. Bond
Construction Administration Engineer

RECEIVED
DEC 9 1969
OFFICE OF
STATE HIGHWAY ENGINEER

JAB/DES:fw

Attach.

cc V. L. Gallagher

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7283 Contractor D & D Paving, Inc.

Highway FAS 741

Section Ward Drive-Silverton Road

Kind of Work Grading and Paving

It is recommended that the request for increase in the number of workdays within which to complete said contract be ~~DENIED~~ GRANTED. The reasons for such recommendation are as follows:

Delays caused by utility relocation, work added to the contract, and the effect of poor late fall weather following earlier delays justify an increase of 24 calendar workdays.

Recommended for Approval:

R. D. Asburry
Division Engineer

for
Construction Engineer or Bridge Engineer

Assistant State Highway Engineer

State Printing 37000

Contract No. 7283

Project designation SU-528(3)
State-Federal

Date awarded July 3, 1969

Work started July 28, 1969

Per cent completed 100 10-28-69
Date

No. of Workdays Allowed Calendar 75

No. of Workdays Used Calendar 99

No. of Added Workdays Requested Calendar 24

E—330 (Rev.)—534—5-60

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon

Date October 31, 1969

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 75 days to 99 days, within which to complete our Contract No. 7283, without the assessment of liquidated damages. The said contract is described as follows: **Silverton Road FAS 741 (Lancaster Drive) Marion County**

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

See attached ~~it~~ detailed list, also letter

Respectfully submitted,

D x D Paving Inc
Contractor

By J. Ray Daniels Pres

CONSENT OF SURETY

Date Oct 31, 19 69

We, Fidelity and Casualty Co. of
Hartford, Connecticut, as

surety on the bond guaranteeing the completion of the contract above named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

Louis W. Wilder
Attorney-in-fact

(SEAL)

Louis W. Wilder
Resident Agent

D&D PAVING, INC

COMMERCIAL PAVING MATERIALS

1815 22nd Street S.E. Salem, Oregon 97302

Telephone 364-4904

ATTACHMENT TO
CONTRACTORS REQUEST FOR INCREASE IN NUMBER OF WORKDAYS TO COMPLETE CONSTRUCTION CONTRACT

July 30, through August 5, 1969 - Telephone Cable relocation held up grading	6 Days
August 13, through August 20, 1969 - Telephone splicing, PGE, Poles being moved. Natural Gas line installation. Work resumed August 21.	7½ Days
August 22, through August 26, 1969 - Pipe crews installed County Sanitary Sewers, not in Contract, held rock laying crews to 50% efficiency.	1½ Days
August 8, 1969 - Excavating machinery broke through existing Culvert. Time lost to repair and replace	2 Days
August 8, 1969 - Price agreement after completion date for installation of 4" Storm Drains behind sidewalks	2 Days
August 7, 1969 - Price agreement - installation of Mail Boxes after Sidewalk installation	3 Days
Inasmuch as the above delays caused the project to extend into the rainy season, there were many small delays that we feel would easily add up to	2 Days

D&D PAVING, INC

COMMERCIAL PAVING MATERIALS

1815 22nd Street S.E. Salem, Oregon 97302

Telephone 364-4904

October 31, 1969

Oregon State Highway Commission
Salem, Oregon

Attn: E.J. Hall, Resident Engineer.

Subject: Ward Drive-Silverton Road
FAS 741 Lancaster Drive
Marion County
Contract No. 7283

Gentlemen:

With reference to our request for an increase in the number of workdays as shown on the formal Request form, we would like to add the following statement.

The Calendar days count ended on October 4, 1969. Since that time and the completion of the job, it has rained on several occasions to the extent that paving could not proceed.

We cpmpleted the job on October 28, 1969 with the final inspection on the 29 th.

We feel that had we not been held up by the the Utility companies and other delays as shown on our list, over which we had no control, we could have completed the project before the rainy season . We are, therefor, asking for the 24 additional days..

For your further information we have put in 1940 overtime hours in an effort to get the job completed.

We respectfully request your consideration.

Yours Sincerely
D & D Paving, Inc.

J. Ray Daniels, Pres.

J Ray Daniels

jrd/es

RECEIVED
DEC 15 1969
FOR FILING
SU-528(3)
7283

December 12, 1969

Oregon State Highway Commission

Gentlemen:

Request for Extension of Time
No. 4
December 23, 1969 meeting

B & B Paving, Inc., contractor on the Ward Drive-Silverton Road Section of FAS 741 (Lancaster Drive east of Salem) in Marion County, Contract No. 7283, has requested a 24-day contract time extension. The request is based on delays from utility relocations, three items of work added to the contract, and the effect of poor, late, fall weather following these earlier delays.

The arrangements for relocating utilities was a County obligation, but just after the project got under way in early August, unanticipated adjustments of an underground telephone line and a gas line interrupted the contractor's grading progress for a total of 14-1/2 days. A similar delay for 3-1/2 days occurred during installation of sanitary sewers within the project by others. Additional contract quantities or added orders justify a total of five days. These were for replacement of additional arch culvert pipe, installation of mail box posts, and extra small drains from behind the sidewalk area.

The above reasons collectively justify 22 days. The seasonal effect of these delays shifted the paving work, which is about the last major work performed, into poor, late, fall weather. This influence justified at least two additional days, making a total of 24.

The project was completed on October 28, with 24 days liquidated damages accrued amounting to $2,400. I recommend a 24-day time extension which will delete all liquidated damages. This is a Federal-aid Secondary project and approval by the Bureau of Public Roads is not required.

This matter will be on the agenda for your consideration at the December 23 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Query
R. L. Porter
F. B. Klaboe
V. D. Wolfe
V. E. Skoog
F. D. Morgan
R. D. Asburry

JAB:fw sr

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7283 Contractor D & D Paving, Inc.

Highway FAS 741

Section Ward Drive-Silverton Road

Kind of Work Grading and Paving

It is recommended that the request for increase in the number of workdays within which to complete said contract be ~~DENIED~~ or GRANTED. The reasons for such recommendation are as follows:

Delays caused by utility relocation, work added to the contract, and the effect of poor late fall weather following earlier delays justify an increase of 24 calendar workdays.

Recommended for Approval:

R. D. Asbury
Division Engineer

Construction Engineer or Bridge Engineer

Assistant State Highway Engineer

Contract No.	7283
Project designation	SU-528(3) State-Federal
Date awarded	July 3, 1969
Work started	July 28, 1969
Per cent completed	100 10-28-69 Date
No. of Workdays Allowed	75 Calendar
No. of Workdays Used	99 Calendar
No. of Added Workdays Requested	24

State Printing 7760

E-330 (Rev.)—5M—5-60

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon

Date October 31, 1969

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 75 calender days to 99 days, within which to complete our Contract No. 7283, without the assessment of liquidated damages. The said contract is described as follows: Silverton Road FAS 741 (Lancaster Drive) Marion County.

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

See attached detailed lists also letter.

Respectfully submitted,

D & D Paving, Inc.
Contractor

By J. Ray Daniels Pres.

CONSENT OF SURETY

Date Oct 31, 1969

We, Fidelity and Deposit Co. of
Baltimore, Maryland, as

surety on the bond guaranteeing the completion of the contract above named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

Attorney-in-fact

(SEAL)

Resident Agent

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7283 Contractor D & D Paving, Inc.

Highway FAS 741

Section Ward Drive-Silverton Road

Kind of Work Grading and Paving

It is recommended that the request for increase in the number of workdays within which to complete said contract be ~~DENIED~~ or GRANTED. The reasons for such recommendation are as follows:

Delays caused by utility relocation, work added to the contract, and the effect of poor late fall weather following earlier delays justify an increase of 24 calendar workdays.

Recommended for Approval:

R. D. Asbury
Division Engineer

Construction Engineer or Bridge Engineer

Assistant State Highway Engineer

Contract No.	7283
Project designation	SU-328(3) State-Federal
Date awarded	July 8, 1969
Work started	July 28, 1969
Per cent completed	100 10-28-69
No. of Workdays Allowed	75 Calendar Date
No. of Workdays Used	99 Calendar
No. of Added Workdays Requested	24

State Printing 37000

E—220 (Rev.)—5M—8-69

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon

Date October 31 19 69

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 75 days to 99 days, within which to complete our Contract No. 7283, without the assessment of liquidated damages. The said contract is described as follows: Silverton Road FAS 741 (Lancaster Drive) Marion County

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

See attached it detailed list, also letter

Respectfully submitted,

D & D Paving Inc
Contractor

By J Ray Daniels Pres.

CONSENT OF SURETY

Date 10/31, 19 69

We, Fidelity and Deposit Co. of Baltimore, Maryland,
10
as surety on the bond guaranteeing the completion of the contract above named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

Attorney-in-fact

(SEAL)

Resident Agent

FORM E-1 (REV. 12-64) SU-528(3)

OREGON STATE HIGHWAY DEPARTMENT

FIELD ENGINEER'S WEEKLY REPORT

FOR CONSTRUCTION PROJECTS ONLY
CONSTRUCTION AND BRIDGE DIVISIONS

SECTION: WARD DRIVE - SILVERTON ROAD	WEEK ENDING: November 22, 1969	
	SECTION PREFIX: 524-1075	
HIGHWAY: FAS 741 (Lancaster Dr.)	COUNTY: Marion	
NAME OF JOB: Ward Drive - Silverton Road Section	KIND OF WORK: Grading and Paving	
CONTRACTOR: D & D Paving, Inc.	CONTRACT NUMBER: 7283	FEDERAL AID PROJECT NUMBER: SU-528(3)
DATE OF CONTRACT: July 3, 1969	DATE WORK STARTED: July 28, 1969	ESTIMATED COMPLETION DATE:
AVERAGE FORCE ON PROJECT FOR THE WEEK: MEN: SUPERVISION:	SPECIFIED WORK DAYS	WORK DAYS USED
	SPECIFIED CALENDAR DAYS: 75	CALENDAR DAYS USED: 99
PROJECT AUTHORIZATION: $ 327,806.72	SPECIFIED COMPLETION DATE	PERCENT OF TIME ELAPSED: 132
EXCLUSIVE OF ENGINEERING: $ 301,813.24	ENGINEERING AUTHORIZATION: $ 25,993.48	PERCENT OF CONTRACT COMPLETED BASED ON ESTIMATED COST: 100
ESTIMATED COST OF COMPLETED PROJECT, EXCLUSIVE OF ENGINEERING: $ 281,184.65	ENGINEERING COST TO DATE: $ 26,000	PERCENT OF CONTRACT COMPLETED BASED ON TOTAL AUTHORIZATION: 100
ESTIMATED PERCENT: [redacted] UNDERRUN 7 %	PERCENT OF AUTHORIZATION 100 %	DATE PROJECT WAS COMPLETED: October 28, 1969

Cost this week 700.00

ESTIMATED PERCENT COMPLETE (ROADWORK)

CLEARING	DRAINAGE	GRADING	BASE	OIL AND/OR PAVE.	MAT'L. PROD.		
			GRADING	SURFACING	MAINTENANCE MATERIALS	Bit. Base OIL & INTERLAYER MATERIAL	PAVING
MILES IN PROJECT			0.94	0.94			0.94
MILES PARTIALLY COMPLETED							
MILES COMPLETED							
TOTAL ESTIMATED QUANTITIES (CONTRACT)			11,700 CY	23,400 T		7,200 T	8,200 T
TOTAL QUANTITIES CORRECTED TO DATE			11,820	22,465		5,976	9,873
ESTIMATED QUANTITIES MOVED OR PLACED TO DATE			11,820	22,465		5,976	9,873
AVERAGE DAILY QUANTITIES							
AVERAGE DAILY QUANTITIES NECESSARY TO COMPLETE PROJECT ON TIME							
NUMBER OF SHIFTS PER DAY							
HOURS PER SHIFT							

EQUIPMENT USED DURING THE WEEK:

ESTIMATED PERCENT COMPLETE (STRUCTURES)

BRIDGE NO.								
PERCENT								

	WEATHER	WORK DAYS CHARGED	HOURS DELAY	CAUSE OF DELAY
SUNDAY				
MONDAY				
TUESDAY				
WEDNESDAY				
THURSDAY				
FRIDAY				
SATURDAY				

Routing

Morgan

Decker

Bond

Walker

Boehme

Johnson

Pease

Swan

Glenn

Litchfield

Gallagher

Stein

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NOV 24 1969
CONSTRUCTION DIVISION

NOTED
R. D. CHURCH

GENERAL DESCRIPTION OF ACTIVITIES FOR THE WEEK	
SUNDAY	
MONDAY	
TUESDAY	
WEDNESDAY	
THURSDAY	
FRIDAY	
SATURDAY	

REMARKS

Semi-final estimate turned in to Division Office on Thursday, Nov. 20.

- F I N A L R E P O R T -

SIGNED E. J. Hall LOCATION Salem

PRIME RESIDENT SUBMIT 2 COPIES. WHEN BRIDGES AND GRADING BOTH ARE INVOLVED, SUBMIT 3 COPIES.

SP-F216

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NOV 12 1969
FOR FILING
SU-5283(3)
7293

COMMISSIONERS
HENRY C. MATTSON, CHAIRMAN
PAT McCARTHY
HARRY CARSON, JR.
EXECUTIVE SECRETARY
BRUCE PROSSER
LEGAL COUNSEL
DUANE R. ERTSGAARD

MARION COUNTY
BOARD OF COMMISSIONERS
COURTHOUSE
SALEM, OREGON 97301

TELEPHONE 364-4401
AREA CODE 503

November 5, 1969

RECEIVED
DIVISION ENGINEER - Division No. 2
NOV 7 1969
ROUTING
ASBURRY ☐ WIMER ☐ BOYD ☐
CANFIELD ☐ ☐ ☐

Mr. R. D. Asburry
Division Engineer
Oregon State Highway Department
State Highway Building
Salem, Oregon 97310

Dear Mr. Asburry:

Lancaster Drive, FAS 741

Marion County has inspected the work on the Ward Drive to Silverton Road section of Lancaster Drive, FAS 741, and hereby is accepting this project as completed.

Very truly yours,

MARION COUNTY BOARD OF COMMISSIONERS

Henry C. Mattson
Chairman

Pat McCarthy
Commissioner

Harry Carson Jr.
Commissioner

im

NOTED
FLOYD QUERY

cc: Construction
County & City
Secretary 11-12-69 cg

OREGON STATE HIGHWAY DEPARTMENT
PROJECT INSPECTION AND DIVISION INSPECTION REPORT

10-29-69

Project Name Ward Drive-Silverton Road Contract No. 7283

Highway Lancaster Drive Prefix No. 524-1075

County Marion County FAS 741 NOTED H. S. COX F.A. No. SU-528(3)

Final inspection made on 10-29-69 By Gerald Wimer

in company with Ernie Valach, B.P.R.; Lyle Renz, B.P.R.; John Bond, OSHD; Ed Hall, OSHD; Arlin Bedell, OSHD; Ron Busey, OSHD; Ted Kuenzie, Marion County; and Ray Daniels, Contractor.

CHECK LIST

Date		Date	
		10-31-69	Stripe for 4 lanes
11-1-69	Construction signs removed	Never Closed	Opened to traffic.
No formal zone, 35 construction removed 10-29-69	Salem office notified to rescind construction speed zone.	With semi-final	Division materials certification submitted.
10-28-69	Contractor removed equipment from project.		
10-28-69	Roadside cleanup completed.		

REMARKS: (Appearance and riding quality of job, general quality of workmanship, etc.)

Good appearance and ride. B.P.R. wants signs and lines before their formal acceptance. These were subsequently done. Letter of acceptance from county to follow.

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NOV 5 1969
ENGINEER
COUNTY & CITY DIVISION

All contract work on this project has been completed and recommendation is made for acceptance on 10-28-69. The semi-final estimate will be submitted about 12-7-69.

NOTED
HAROLD REYNOLDSON

cc: Construction Engineer - F. D. Morgan
Division Engineer - R. D. Asbury
~~Maintenance Engineer - E. C. Hunter~~
~~Bridge Engineer - Ivan D. Merchant~~
Traffic Engineer - F. B. Crandall
County-City Engineer - H. S. Cox
Resident Engineer - Ed Hall
District Maintenance Supt. - Floyd Lacey

Copies sent to all named .

Noted Oscar H. Norberg
NOTED [illegible] C. HOLMES
NOTED RICHARD UNREIN
NOTED P. B. Arenamoic

NOTED R. H. PRANGE

lf

(signed) Asst. Div. Engr. (title)

NOTED DON HARWELL

OREGON STATE HIGHWAY DEPARTMENT

FORM A-190 (3-66)

HIGHWAY DEPARTMENT INVOICE

NO. 99166

DATE	BILLING REQ. NO.	YOUR ORDER NO.	CREDIT DISTRIBUTION
7-8-69	CC 2177		521-2075-197

- Marion County
- Board of Commissioners
- Courthouse
- Salem, Oregon 97301

MAKE CHECKS PAYABLE TO
THE OREGON STATE HIGHWAY DEPARTMENT

SEND REMITTANCE TO:
OREGON STATE HIGHWAY DEPARTMENT
STATE HIGHWAY BUILDING
SALEM, OREGON 97310

DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
Attention: John Anderson, Public Works Director			
Advance Deposit			$35,600.00
Partial transfer of the advance deposit for the Ward Drive - Silverton Road Section, Lancaster Drive, FAS 741			50,600.00
To be retained			15,000.00
required by agreement dated 10/1/68			

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JUL 9 1969
ENGINEER
COUNTY & CITY DIVISION

ACKNOWLEDGMENT OF BILLING REQUEST

Cash Received with Request: $_____

By _____

NOTED
R. H. PRANGE

NOTED
MARION C. HOLMES

NOTED
DON HARWELL

NOTED
RICHARD UNREIN

24

NOTED
H. S. COX

June 27, 1969

Marion County Board of Commissioners
Courthouse
Salem, Oregon 97301

Attention Mr. John Anderson
Director of Public Works

Gentlemen:

On June 26, a satisfactory bid was received from the D & D Paving Company,, Inc., of Salem, for the Ward Drive-Silverton Road Section of Lancaster Drive, FAS 741. As per the agreement between the State and County, the following advance deposit is required from the County prior to awarding of a contract:

Bid items	$283,816.50
Flagging	2,500.00
Signing	2,000.00
Move mail boxes	500.00
13-1/2% Engineering & contingencies	38,990.23
Estimated total cost	$327,806.73

County advance deposit:
20% of $327,806.73 = $65,561.35 or say $65,600.00.

Please make this advance deposit in the amount of $65,600 payable by check or warrant to the Oregon State Highway Commission and forward same to this office.

Very truly yours,

H. S. Cox
County and City Engineer

HR

By: Harold Reynoldson
Planning Engineer

HR:eb

NOTED
R. H. PRANGE

Noted
Oscar H. Norberg

NOTED
MAINOR C. HOLMES

NOTED
RICHARD UNREIN

NOTED
P. B. Arensmeier

NOTED ✓
DON HARWELL

RECEIVED
JUL 24 1969
FOR FILING

SU-528(3)

7283

July 24, 1969

D & D Paving, Inc.
1615 - 22nd Street, S.E.
Salem, Oregon 97302

Gentlemen:

We enclose for your files a fully executed copy of the following described contract which was awarded to you by the State Highway Commission:

Contract No. 7283 for grading and paving on the Ward Drive-Silverton Road Section of FAS 741 (Lancaster Drive) in Marion County.

A copy of this contract is also being sent to the surety on your performance bond.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

er

Enclosure

cc: Fidelity & Deposit Co. of Maryland, Portland and Baltimore
D. J. Barbee
F. D. Morgan
I. D. Merchant
R. D. Asburry
E. J. Hall

24

FORM S-20 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

NOTED
H. S. COX

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
July 23, 1969

To: Ed Hall
RESIDENT ENGINEER

SUBJECT: Destination Signing et al
Ward Drive-Silverton Road Section
~~FAS 714~~ (Lancaster Drive)
Contract No. 7283
Prefix # 524-1075

Harold Reynoldson determined last Friday from Ted Kuenzi that Marion County wants to do their own permanent signing on the subject project.

These destination signs, stop signs and school signs will have to be maintained during the project and it is considered the contractor's responsibility under the No. 1 bid item "temporary protection and direct traffic."

If the contractor performs his temporary signing work by resetting these signs to their permanent position nothing further will be necessary until the County does their permanent signing. But if he handles the temporary signing in some other manner and the County can't be scheduled to do their permanent signing almost simultaneously with completion of the project, then it will be necessary for you to issue an Extra Work Order and cause the existing signs and sign post to be reinstalled in a permanent position.

Another way of looking at this is that the contractor is obligated to sign his construction activities and maintain existing signing during the project but any upgrading during or after the completion of his work would have to be paid for by extra work or price agreement.

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JUL 25 1969
ENGINEER
COUNTY & CITY DIVISION

R. D. Asburry
DIVISION ENGINEER

By Gerald Wimer
Gerald Wimer
ASST. DIVISION ENGINEER

GW/eg

cc: John Bond
Harold Reynoldson

NOTED
HAROLD REYNOLDSON

NOTED
MANNOR S. HOLMES

NOTED
R. H. PRANGE

Noted
Oscar H. Rogers

NOTED
RICHARD UNREIN

NOTED
P. B. Arensmeier

NOTED
DON HARWELL

STATE COPY

Approved; Budget Bureau No. 41-R2089.1

MONTHLY TRANSACTION NO.	FORM PR-2 (REV. 3-66) U.S. DEPARTMENT OF COMMERCE BUREAU OF PUBLIC ROADS	STATE
7-25		Oregon
PROJECT REPORT NO.	**FEDERAL-AID PROJECT AGREEMENT**	COUNTY
3	*(PPM 21-7)* 7-18-69	Marion
		PROJECT NO. S0-528(3)

The State, through its Highway Department, having complied, or hereby agreeing to comply, with the terms and conditions set forth in (1) Title 23, U.S. Code, Highways, (2) the Regulations issued pursuant thereto by the Secretary of Commerce and, (3) the policies and procedures promulgated by the Federal Highway Administrator relative to the above designated project, and the Bureau of Public Roads having authorized certain work to proceed as evidenced by the date entered opposite the specific item of work, Federal funds are obligated for the project not to exceed the amount shown herein, the balance of the estimated total cost being an obligation of the State. Such obligation of Federal funds extends only to project costs incurred by the State after the Bureau of Public Roads authorization to proceed with the project involving such costs.

PROJECT TERMINI

Ward Drive-Silverton Road Section of FAS 741

PROJECT CLASSIFICATION OR CLASS OF WORK	EFFECTIVE DATE OF AUTHORIZATION	APPROXIMATE LENGTH *(Miles)*
HIGHWAY PLANNING		
PRELIMINARY ENGINEERING		
RIGHTS-OF-WAY		
CONSTRUCTION	6-4-69	0.947
OTHER *(Specify)*		

FUNDS Pro Rata 63.54%

ESTIMATED TOTAL COST OF PROJECT	FEDERAL FUNDS
$ 317,148.00	$ 201,500.00

The State further stipulates that pursuant to said Title 23, Regulations, and policies and procedures, and as a condition to payment of the Federal funds obligated, it accepts and will comply with the applicable provisions set forth on the reverse hereof.

OREGON STATE HIGHWAY DEPARTMENT
(Official name of Highway Department)

By P K Klabon

Assistant State Highway Engineer
(Title)

By _____

(Title)

By _____

(Title)

U.S. DEPARTMENT OF COMMERCE

BUREAU OF PUBLIC ROADS

By L K Green
(Division Engineer)

For: R. E. Simpson

Date executed by Division Engineer JUL 18 1969

Oregon State Highway Department

Federal Aid
Project No. SU-528(3)

WARD DRIVE-SILVERTON ROAD SECTION

OF FAS 741 IN MARION COUNTY

Project agreement estimate.

Salem, Oregon, July 11, 1969

Type Code 6203
Grade and Pave (Sta. 154+50 to Sta. 204+50) (Contract No. 7283)

Temporary Protection and Direction of Traffic	All Required		$ 2,700.00
Clearing and Grubbing	All Required		4,675.00
General Excavation, Unclassified	11,700 cu. yd.	1.54	18,018.00
Finishing Roadbed and Slopes	0.90 mile	1,320.00	1,188.00
Trench Excavation	1,800 cu. yd.	3.85	6,930.00
Watering	420 M-gal.	4.00	1,680.00
Pavement Replacement	540 lin. ft.	4.30	2,322.00
Stone Base	13,700 ton	2.55	34,935.00
Blanket Course	9,700 ton	2.65	25,705.00
3/4" - 0 Material in Foundation Course	600 ton	4.00	2,400.00
Bituminous Base Mixture	7,200 ton	5.15	37,080.00
Asphalt in Bituminous Base Mixture	320 ton	30.00	9,600.00
3/4" - 0 Aggregate in Prime Coat	210 cu. yd.	6.10	1,281.00
RC-250 Asphalt in Prime Coat	33 ton	55.00	1,815.00
Asphalt in Tack Coat	8 ton	65.00	520.00
Class "B" Asphalt Concrete	8,200 ton	6.65	54,530.00
12-inch Culvert Pipe	30 lin. ft.	3.85	115.50
60-inch Culvert Pipe	70 lin. ft.	52.00	3,640.00
54-inch Arch-Type Pipe	26 lin. ft.	47.00	1,222.00
8-inch Storm Sewer Pipe	1,960 lin. ft.	3.30	6,468.00
10-inch Storm Sewer Pipe	60 lin. ft.	3.30	198.00
12-inch Storm Sewer Pipe	1,940 lin. ft.	5.20	10,088.00
15-inch Storm Sewer Pipe	920 lin. ft.	6.35	5,842.00
18-inch Storm Sewer Pipe	880 lin. ft.	7.70	6,776.00
Concrete Manholes	6 only	330.00	1,980.00
Concrete Inlets, Type CG-1 Modified	40 only	150.00	6,000.00
Concrete Inlets, Type CG-2 Modified	10 only	135.00	1,350.00
Concrete Inlets, Type GB-2	1 only	165.00	165.00
Special Inlets	9 only	33.00	297.00
Adjusting Manholes	16 only	33.00	528.00
Adjusting Boxes	3 only	11.00	33.00

Concrete Curbs	550 cu. yd.	46.50	$ 25,575.00
Extra for A.C. Conc. Approaches	60 only	45.00	2,700.00
Extra for A.C. Conc. Walks	4,200 sq. yd.	1.30	5,460.00
			$283,816.50
Flagging (60% of contractor's costs)	All Required		2,500.00
Signing	All Required		2,000.00
			4,500.00
	Subtotal		$288,316.50
	10% Engr. & Cont.		28,831.50
	Total		$317,148.00

Length of Project 0.947 mile
Cost of Roadway per Mile $334,897.57

Summary of Funds

Federal Funds	$201,500.00
State Funds	57,824.00
County Funds	57,824.00
Total Cost	$317,148.00

State Funds for Const.: Chap. 175, Laws 1917; Chap. 31, Laws 1920; Chap. 529, Laws 1939.
State Funds for Maint.: Chap. 529, Laws 1939.

Group 1 - 100%

Prefix No. 524-1075

WARD DRIVE-SILVERTON ROAD SECTION

SU-528(3)

Nonparticipating - State Work

Move Mail Box Posts	All Required	$500.00

RECEIVED
AUG 12 1969
FOR FILING

SU-528 (3)
7283

July 3, 1969

B & B Paving Co., Inc.
1815 22nd Street, S.E.
Salem, Oregon 97302

Gentlemen:

The State Highway Commission today accepted your proposal for grading and paving on the Ward Drive-Silverton Road Section of FAS 741 (Lancaster Drive) in Marion County for the sum of $283,816.50 and referred it to the State Highway Engineer with authority to award the contract as soon as approval of Marion County is received and the sum of $65,600 is deposited by the County.

Later today these conditions were fulfilled and the State Highway Engineer awarded you the project, which has been assigned Contract No. 7283.

Contract forms will be sent to you for execution within the next few days.

Very truly yours,

Floyd Emery, Secretary
OREGON STATE HIGHWAY COMMISSION

cc

bc: L. J. Barbee
P. D. Morgan
I. D. Merchant
William Geibel (SALT)
Pacific Builder & Engr., Inc., Seattle, Wash.
Daily Journal of Commerce, Seattle, Wn., & Portland, Ore.

24

NOTED
H. S. COX

Oregon State Highway Commission
State Highway Building
Salem, Oregon

6-23-69

Attention: County and City Division

SUBJECT: Federal Aid Project No. _____

Highway No. FAS 741

Project Name Ward Drive-Silverton Road Section

Lancaster Drive

Gentlemen:

1. We hereby certify that, to the best of our knowledge and belief, all rights-of-way or rights-of-entry for the above referred to Federal-aid project have been secured.

2. We hereby certify that: (check one)

☑ There has been no displacement of persons from residences, farms, or businesses; or

☐ All displaced persons have been tendered all assistance possible and given all available information to assist in re-establishment in residence, farm, or business.

3. We hereby certify that the occupancy and/or adjustment of existing utilities within the right-of-way of the above referred to Federal-aid project have been authorized by permit, franchise, or other approved procedure.

Dated at Salem, Oregon, this 23rd day of June, 19 69.

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JUN 24 1969
ENGINEER
COUNTY & CITY DIVISION

Marion County

Henry L. Mattson
Chairman

Pat McCarthy
Commissioner

Harry Grenon
Commissioner

NOTED
HAROLD REYNOLDSON

Copy to John Oaks
R.D. Asbury
R.N. Chase
C.G. Swenson

NOTED
MAINOR C. HOLMES

NOTED
RICHARD UNREIN

NOTED
P. B. Arensmeier

NOTED
Oscar H. Norberg

NOTED
DON HARWELL

NOTED
R. H. PRANGE

(11/29/66)

(12-7-66 150)

RECEIVED
JUN 12 1969
FOR FILING

SU-528 (3)

7283

MISC. CONTRACTS and
AGREEMENTS No. 3712

June 12, 1969

Board of County Commissioners
Marion County
Courthouse
Salem, Oregon 97301

Attention: T. Harold Tomlinson
County Clerk

Gentlemen:

Attached for your records is a fully executed copy of an agreement covering the Silverton Road-Ward Drive Section of the Lancaster Drive County Road (FAS 741).

We have retained a fully executed copy of this agreement for the Commission's files.

Very truly yours,

Floyd Omery, Secretary
OREGON STATE HIGHWAY COMMISSION

fhm
Attachment

cc H. S. Cox
(conformed agreement attached)

NOTED
H. S. COX

FORM PR-48
(REV. 7-67)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

TRANSMITTAL AND REQUEST FOR INITIAL PROGRAM APPROVAL OF PROJECTS

(PPM 21-1)

STATE HIGHWAY DEPARTMENT: Oregon

DATE: 6/4/69

BY (Signature): Mr. Young's May 26, 1969 letter

TITLE:

CLASS OF FEDERAL FUNDS: ☐ FAI ☐ FAP ☐ FAU ☒ FAS ☐ OTHERS

STAGE 1 * ITEM NOS. _____ THRU _____

STAGE 2 ITEM NOS. 1005 THRU 1006

ITEM NO.	PROJECT NOS.	LENGTH (Miles)	TOTAL ESTIMATED COST	FEDERAL FUNDS	Location	Work
1005	SU-559(2)	1.00	430,000	258,000	N. Delaware Ave. to N. Woolsey Ave. Section on N. Columbia Blvd., Portland	Grade, drain and High type Pavement
1006	SU-528(3)	1.02	320,000	192,000	Ward Drive to Silverton Road Section on Lancaster Drive, Salem	Grade, drain and High type Pavement

OTHER IDENTIFICATION AND/OR REMARKS (State)

RECEIVED
JUN 9 - 1969
ENGINEER
COUNTY & CITY DIVISION

copies to Young
Barlow
Cox
6-6-69

RECEIVED
JUN 5 1969
OFFICE OF
STATE HIGHWAY ENGINEER

REMARKS (Division)

On Item 1005, SU-559(2) N. Delaware Ave. to N. Woolsey Ave. Section, it is understood that the use of 11' lanes is approved as a Secondary Road Plan design exception.

You are authorized to proceed with actions necessary to advance to completion the physical construction provided for by the above projects in accordance with the provisions of your approved Secondary Road Plan. If you subsequently find that exceptions to the procedure will be needed or that your proposed design standards for these projects are lower than the minimum design standards as approved June 24, 1968, this office should be notified of such proposed exceptions and reasons thereof.

RECOMMENDED		APPROVED	
DATE	SIGNATURE AND TITLE	DATE	SIGNATURE AND TITLE
6-6-69	J. B. Blake, Asst. State Hwy Engr	6/4/69	for R. E. Simpson, Division Engineer

* Program approval and any authorization to proceed with a Stage 1 project shall not constitute any commitment of Federal funds nor shall it be construed as creating in any manner any obligation on the part of the Federal Government to provide Federal funds for the undertaking.

NOTED
R. H. PRANGE

NOTED
MAINOR C. HOLMES

Noted
Oscar H. Norberg

NOTED
P. B. Arm... 927-954

NOTED
DON HARWELL

NOTED
RICHARD UNREIN

24

MONTHLY TRANSACTION NO. 6-45

DATE SUBMITTED TO W. O. JUN 4 1969

FORM PR-1 (REV. 4-61)

FEDERAL-AID (PP

CARD 2	REPORT NUMBER (18)(20)	PROJECT LOCATION (45 typewriter spaces) 21 55		ADT	PRESENT	FUTURE (68)(70)	TE (71)	
	1	Co. Rd. Ward Drive to Silverton Road (Salem)			3,600	7,550	8	
CARD 3	CHARACTER OF PROPOSED WORK (35 typewriter spaces) 26 62		NATL. FOREST (63)(65)	FH ROUTE NO. (66)(68)	SUPV AGCY (69)	DA CLASSIF. (70)	DA AREA (71)	EMERG. YR. (73)(75)	PL. AU (74)
	Gr. Dr. High Type Pave.							8-2	
CARD 4	CLASS OF FEDERAL FUNDS						COUNTY NAME		
	Secondary								M
	NAME OF URBAN AREA 17-31						ROUTE NO.	FEDERAL-	
	Salem						S	741	

CARD 5	LINE NO.	CHANGE CODE	PROJECT CODE	WORK CLASS	WORK TYPE (43-46)	STEP	TERMINI (Full description)	MILES (54)(56)	ESTIMATED PROJECT COST (59)(66)	ESTIMATED PROJECT FEDERAL FUNDS (67)
1	(1-4-5)	(16	41	42		53				
5					PE		Co. Rd. Ward Drive to Silverton Road (Salem)			
5					ROW					
5	30			3	CONST (CODE) 6201	3		1.02	320,000	192,000
							PROJECT TOTALS	1.02	320,000	192,000

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ENGINEER
COUNTY & CITY DIVISION

CARD 1	CODE 1	PREPARED BY
1	14	PROGRAM APPROVAL DATES

JUN 4 1969

BPR OREGON DIVISION

Budget Bureau No. 41-R2067; Approval Expires February 28, 1966

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

FEDERAL-AID PROGRAM DATA

(PPM 21-1)

		PRESENT	FUTURE	YEAR	REGION	STATE NAME	STATE CODE	APPN CODE	ITEM NO.
Salem)	ADT	3,600	7,550	89	08	Oregon	35	022	1006

SUPV AGCY	DA CLASSIF.	DA AREA	EMERG. YR.	PL. AUTH YR	PROJECT NUMBER PREFIX LETTER(S)	NUMBER	SEQ. NO.	I. Projects Only POST MI., DESIG.
			82		SU-	528	(3)	

COUNTY NAME: Marion — CODE: 047

ROUTE NO.: S — FEDERAL-AID: 741 — STATE: Co. Rd. — U.S.:

PROGRAM STAGE: [ ] 1 OR [X] 2

MILES	ESTIMATED PROJECT COST BY PHASES: TOTAL ESTIMATED COST	FEDERAL FUNDS	STATE FUNDS	OTHER FUNDS	CHARACTER OF PROPOSED WORK (Full description)
1.02	320,000	192,000	64,000		Gr. Dr. 4 - 12' lanes H. T. Pave. with 8' parking lanes, 4' median, curb section with 5' AC sidewalks.
1.02	320,000	192,000	64,000		ROW - 80' min.; Access Control - none; Parking Restrictions - none.

REMARKS

RECEIVED
- 1969
INEER
CITY DIVISION

USCOMM DUSCOMM-DC 48905-P61

WARD DRIVE-SILVERTON ROAD SECTION
PROJECT SU-528(3)

EXISTING FACILITIES

2 - 10' AC travel lanes with 4' gravel shoulders on tangent alignment. Sanitary sewers recently installed.

ADJACENT SECTIONS

North End: 2 - 10' AC travel lanes with 4' gravel shoulders.

South End: AC paved and curbed section with 4 - 11' travel lanes, 1' shy distance at each curb with a 1' median, and no parking.

PROJECT DATA

Grade, drain, base, curb, and pave with AC a roadway 68' in width for 4 - 12' travel lanes, 4' median, 2 - 8' parking lanes, and with 2 - 5' AC foot paths. Install storm sewers. This section is to be similar to Sunnyview Avenue-Silverton Road Section which is immediately south and adjacent to this section.

Right of Way: 80' minimum
Access Control: None
RR Xing: None
Minimum Design Standards: The standards on this section have been reduced because of the high cost of right of way and the location of public and private improvements along this urban route - for dimensions see above. The county has used this same typical section on previous projects on this route - see S-528(1) and SU-528(2). The county intends to complete the remainder of this route (0.7 or 0.8 mile) to FAP-3 (99E) with the same typical section.

System Action: Completed
Public Hearing: Not required - right of way acquired as of Aug. 1968

Unusual or Complicated Situations:
Route Data: See SU-528(1)

Location and Design Approval by Asst. Hwy. Engr.:
Social, economic and environmental effects considered:
C.O.G. acceptance:
Parks or Recreation Facilities:
Right of Way Relocation Assistance:

Transportation data for IM 50-2-6
Project SU-528(2).

WARD DRIVE-SILVERTON ROAD SECTION
PROJECT SU-528(3)

ITIES
travel lanes with 4' gravel shoulders on tangent
ary sewers recently installed.

IONS
2 - 10' AC travel lanes with 4' gravel shoulders.
AC paved and curbed section with 4 - 11' travel lanes, 1' shy distance at each curb with a 1' median, and no parking.

in, base, curb, and pave with AC a roadway 68'
r 4 - 12' travel lanes, 4' median, 2 - 8' parking lanes,
- 5' AC foot paths. Install storm sewers. This sec-
similar to Sunnyview Avenue-Silverton Road Section
nmediately south and adjacent to this section.

80' minimum
None
None
n Standards: The standards on this section have been
ecause of the high cost of right of way and the location
d private improvements along this urban route - for
see above. The county has used this same typical
previous projects on this route - see S-528(1) and
. The county intends to complete the remainder of this
or 0.8 mile) to FAP-3 (99E) with the same typical

Completed
Not required - right of way acquired as of Aug. 1968

Unusual or Complicated Situations: None
Route Data: See SU-528(1)

Location and Design Approval by Asst. Hwy. Engr.:	Yes
Social, economic and environmental effects considered:	Yes
C.O.G. acceptance:	Yes 5/5/69
Parks or Recreation Facilities:	None Involved
Right of Way Relocation Assistance:	None Involved

Transportation data for IM 50-2-65 submitted under Project SU-528(2).

RECEIVED
MAY 28 1969

OREGON STATE HIGHWAY DEPARTMENT

SU-528(3)
7283

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

May 27, 1969

Mr. R. E. Simpson, Division Engineer
Bureau of Public Roads
477 Cottage Street N.E.
Salem, Oregon 97310

Dear Mr. Simpson:

The following documentation is submitted in conjunction with the Ward Drive-Silverton Road Section of Lancaster Drive, FAS 741, in Marion County, Project SU-528(3):

1. Correspondence covering favorable comment by Mr. W. J. Kvarsten, Director of Mid-Willamette Valley Council of Governments, pursuant to IM 21-12-67.

2. Copy of a resolution adopted by Marion County giving certain assurances pursuant to Section 35 of the 1968 Federal-Aid Highway Act.

It is further recommended that a public hearing not be required for this project. Marion County acquired necessary rights of way prior to issuance of the new PPM 20-8. Even though the County was not required to hold a public hearing pursuant to former PPM 20-8, hearings were nevertheless held pursuant to State Statutes governing the acquisition of right of way by resolution. There is attached a copy of an order dated July 10, 1968 adopted by the Marion County Board of Commissioners establishing warrants to be paid for right of way.

Very truly yours,

Forrest Cooper
State Highway Engineer

By
for H. S. Cox
County and City Engineer

RECEIVED
MAY 27 1969
OFFICE OF
STATE HIGHWAY ENGINEER

Att.

cc F. B. Klaboe
D. J. Barbee
L. H. Young
R. D. Asburry

RECEIVED
JUN 2 - 1969
FOREST LAB

SU-528(3)
7283

May 26, 1969

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 College Street N.E.
Salem, Oregon

Dear Sir:

We are submitting program data for our Secondary Project, June 1969, Project SU-528(3), West Sand-Gleaston Road Section, which we desire to have included in the Federal-Aid Secondary Highway Program.

This project has been selected by the State Highway Commission and local authorities in cooperation with one another, as required by the Federal-Aid Act.

This project was approved April 8, 1969, by the Mid-Willamette Valley Council of Governments in accordance with Bul 23-11-67. Transportation study data for FAS Route 741 was submitted under Project SU-528(2).

It is our intention to receive bids for this project on June 26, 1969.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

L. H. Young
Programs and Planning Engineer

Encl.

RNC:ia

MONTHLY TRANSACTION NO.

DATE SUBMITTED TO W. O.

FORM PR-1 (REV. 4-61)

FEDERAL - AID P

(PPM

| | | |

Budget Bureau No. 41-R2067; Approval Expires February 28, 1966

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

FEDERAL-AID PROGRAM DATA

(PPM 21-1)

alem)	ADT	PRESENT	FUTURE	YEAR	REGION	STATE NAME	STATE CODE	APPN CODE	ITEM NO.
(65)		3,600	7,550 (66) (70)	89 (71) (72)	08	Oregon	35 (2) (3)	022 (4) (9) (14)	1006 (15)

SUPV AGCY (69)	DA CLASSIF. (70)	DA AREA (71)	EMERG. YR. (72) (73)	PL. AUTH YR (74) (75)	PROJECT NUMBER PREFIX LETTER(S) (14) (23)	NUMBER (7) (13)	SEQ. NO. (24) (26)	I. Projects Only POST MI. DESIG. (27)
					SU-	528	(3)	

	COUNTY NAME	CODE	PROGRAM STAGE
	Marion (42) (16)	047	1 OR X 2

	ROUTE NO.	FEDERAL-AID (32)	STATE (36) (37)	U.S. (41)
	S	741	Co. Rd.	

MILES (54) (55)	ESTIMATED PROJECT COST BY PHASES: TOTAL ESTIMATED COST (56) (57)	FEDERAL FUNDS (76)	STATE FUNDS	OTHER FUNDS	CHARACTER OF PROPOSED WORK *(Full description)*
					Gr. Dr. 4 - 12' lanes H. T. Pave. with 8' parking lanes, 4' median, curb section with 5' AC sidewalks.
1.02	320,000	192,000	64,000		ROW - 80' min.; Access Control - none; Parking Restrictions - none.
1.02	320,000	192,000	64,000		

(16) (23) (24) (33) REMARKS

USCOMM DUSCOMM-DC 48905-P61

WARD DRIVE-SILVERTON ROAD SECTION
PROJECT SU-528(3)

EXISTING FACILITIES

2 - 10' AC travel lanes with 4' gravel shoulders on tangent alignment. Sanitary sewers recently installed.

ADJACENT SECTIONS

North End: 2 - 10' AC travel lanes with 4' gravel shoulders.

South End: AC paved and curbed section with 4 - 11' travel lanes, 1' shy distance at each curb with a 1' median, and no parking.

PROJECT DATA

Grade, drain, base, curb, and pave with AC a roadway 68' in width for 4 - 12' travel lanes, 4' median, 2 - 8' parking lanes, and with 2 - 5' AC foot paths. Install storm sewers. This section is to be similar to Sunnyview Avenue-Silverton Road Section which is immediately south and adjacent to this section.

Right of Way: 80' minimum
Access Control: None
RR Xing: None
Minimum Design Standards: The standards on this section have been reduced because of the high cost of right of way and the location of public and private improvements along this urban route - for dimensions see above. The county has used this same typical section on previous projects on this route - see S-528(1) and SU-528(2). The county intends to complete the remainder of this route (0.7 or 0.8 mile) to FAP-3 (99E) with the same typical section.

System Action: Completed
Public Hearing: Not required - right of way acquired as of Aug. 1968

Unusual or Complicated Situation Route Data: See SU-528(1)

Location and Design Approval by Asst. Hwy. Engr.:
Social, economic and environmental effects considered:
C.O.G. acceptance:
Parks or Recreation Facilities:
Right of Way Relocation Assistance:

Transportation data for IM 50-2 - Project SU-528(2).

WARD DRIVE-SILVERTON ROAD SECTION
PROJECT SU-528(3)

h 4' gravel shoulders on tangent
ently installed.

vel lanes with 4' gravel shoulders.
curbed section with 4 - 11' travel lanes,
e at each curb with a 1' median, and

and pave with AC a roadway 68'
lanes, 4' median, 2 - 8' parking lanes,
s. Install storm sewers. This sec-
nyview Avenue-Silverton Road Section
and adjacent to this section.

e standards on this section have been
cost of right of way and the location
vements along this urban route - for
he county has used this same typical
ts on this route - see S-528(1) and
ends to complete the remainder of this
FAP-3 (99E) with the same typical

- right of way acquired as of Aug. 1968

Unusual or Complicated Situations: None
Route Data: See SU-528(1)

Location and Design Approval by Asst. Hwy. Engr.:	Yes
Social, economic and environmental effects considered:	Yes
C.O.G. acceptance:	Yes 5/5/69
Parks or Recreation Facilities:	None Involved
Right of Way Relocation Assistance:	None Involved

Transportation data for IM 50-2-65 submitted under Project SU-528(2).

RECEIVED
MAY 28 1969
FISH
COMMISSION

OFFICE OF THE DIRECTOR
307 STATE OFFICE BLDG. • 1400 S.W. 5th AVE. • PORTLAND, OREGON • 97201

SU-5281(3)

7283

TOM McCALL
GOVERNOR

COMMISSIONERS
EDW. G. HUFFSCHMIDT, Chairman
McKEE A. SMITH, Vice Chairman
JOSEPH I. EOFF, Member

ROBERT W. SCHONING
State Fisheries Director

cc's sent 5-27-69

F.B. Klaboe
F.D. Morgan
L.H. Young
G.C. Wills
F.E. Terpin (3)
T.C. Roake (3)
A.E. Johnson (2)
L.W. Rulien (2)
R.D. Asburry (2)

Barbee
Hall
A. Olson
Sample
Terpin
Swenson
Trout
Wills
Hackleman
Scott
R. Olson
Carstensen

RECEIVED
MAY 26 1969
DESIGN
DIVISION

May 26, 1969

Mr. Forrest Cooper
State Highway Engineer
Oregon State Highway Department
Highway Building
Salem, Oregon 97310

Attention Frank Hall

Dear Mr. Cooper:

The following title project transmittal to us by your letter dated May 19 has been examined.

Fremont Bridge Section, Stadium Freeway
Hwy., Mult. Co.,

Nyberg Road Interchange Section, Pacific
Hwy., Wash. Co.,

Ward Drive - Silverton Road Section FAS 741,
Marion Co.

We anticipated no fishery conflicts with the above projects; thus they are approved.

The Necanicum Jct. project has been referred to our field office for further investigations. Our reply to this section will be made in the near future.

Sincerely,

BURT CARNEGIE
HYDRAULICS ENGINEER

cc Oregon Game Commission

RECEIVED
MAY 27 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAY 26 1969
OFFICE OF
STATE HIGHWAY ENGINEER

MAY 28 1969

GAME COMMISSION

SU-528(3)

OFFICE OF THE DIRECTOR

7783

P. O. BOX 3503 • 1634 S.W. ALDER ST. • PORTLAND, OREGON • 97208 • Ph. 222-9611

TOM McCALL
GOVERNOR

COMMISSIONERS
GEORGE L. HIBBARD, Chairman
J. PAT METKE, Vice Chairman
JOHN P. AMACHER, Member
JOSEPH W. SMITH, Member
JAMES W. WHITTAKER, Member

JOHN W. McKEAN
State Game Director

May 23, 1969

cc's sent 5-27-69

F.B. Klaboe/
F.D. Morgan
L.H. Young
G.C. Wills
F.E. Terpin (11)
T.C. Roake (11)
A.E. Johnson (4)
L.W. Rulien (6)
R.D. Asburry (8)
C.T. Keasey (2)
A.F. Parson (2)

State Highway Engineer
State Highway Department
Highway Building
Salem, Oregon 97310

Attention: Mr. Frank L. Hall

Dear Sir:

We have reviewed the project plan title sheets sent with your letter of May 19, 1969.

The projects are all approved as there will be no conflict with wildlife resources. The approved projects are listed below.

1. Fremont Bridge Section
   Stadium Freeway, Multnomah County

2. Nyberg Road Interchange Section
   Pacific Highway, Washington County

3. Fountain Slide Section
   Columbia River Highway, Hood River County

4. Kittridge Avenue (Portland) Channelization Section
   Columbia River Highway, Multnomah County

5. Division Street-Hilda Street (Oregon City) Section
   Cascade Highway, Clackamas County

6. Columbia River Highway-Old Portland Road Section
   FAS 574 (Gable Road), Columbia County

7. Ward Drive-Silverton Road Section
   FAS 741 (Lancaster Drive), Marion County

8. Crater Lake Highway-South Fork Reese Creek Section
   FAS 15-101, Jackson County

9. Powder River (McDougal) Lane Section
FAS 506, Baker County

10. Murder Creek Section
Pacific Highway, Linn County

11. Saddle Mountain Junction-Little North Fork Nehalem River Section Sunset Highway, Clatsop County.

Regarding the final project listed, "Saddle Mountain Junction, Little North Fork Nehalem River Section," passage for fish should be maintained and precautions should be taken against siltation.

Very truly yours,

JOHN W. McKEAN
DIRECTOR

By R. O. Koski

R. O. Koski
Chief of Liberations

ROK:js

cc: Dir. OFC

RECEIVED
MAY 27 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAY 27 1969
OFFICE OF
STATE HIGHWAY ENGINEER

MEMO TO R. H. CHASE May 22, 1969

NOTED
H. S. COX

FAS 741, MARION COUNTY: Ward Drive-Silverton Road Section

TERMINI: On Lancaster Drive northeast of Salem, from a point approximately 500' north of the intersection with Silverton Road, FAS 147, to a point approximately 400' north of Ward Drive.
M.P. 2.89 to M.P. 3.87

PROPOSED WORK: Grade, drain, curb, and pave.

PROJECT LENGTH: 1.02 miles

COSTS:	TOTAL	FEDERAL	STATE	COUNTY
CONSTRUCTION	$320,000	$192,000	$64,000	$64,000

EXISTING FACILITIES: 2-10' A.C. travel lanes with 4' gravel shoulders on tangent alignment. Sanitary sewers recently installed.

ADJACENT SECTIONS:
NORTH END: 2-10' A.C. travel lanes with 4' gravel shoulders.

SOUTH END: A.C. paved and curbed section with 4-11' travel lanes, 1' shy distance at each curb with a 1' median, and no parking.

PROJECT DATA: Grade, drain, base, curb, and pave with A.C. a roadway 68' in width for 4-12' travel lanes, 4' median, 2-8' parking lanes, and with 2-5' A.C. foot paths. Install storm sewers. This section is to be similar to Sunnyview Avenue-Silverton Road Section which is immediately south and adjacent to this section.

RIGHT OF WAY: 80' minimum
ACCESS CONTROL: None
RR XING: None
MINIMUM DESIGN STANDARDS: The standards on this section have been reduced because of the high cost of right of way and the location of public and private improvements along this urban route - for dimensions see above. The County has used this same typical section on previous projects on this route - see S-528(1) and SU-528(2). The County intends to complete the remainder of this route (0.7 or 0.8 mile) to FAP-3 (99E) with the same typical section.

SYSTEM ACTION: Completed
PUBLIC HEARING: Not required
UNUSUAL OR COMPLICATED SITUATIONS: None
ROUTE DATA: See SU-528(1)

LOCATION AND DESIGN APPROVAL BY ASST. HWY. ENGR.	YES		NOTED HAROLD REYNOLDSON
SOCIAL, ECONOMIC AND ENVIRONMENTAL EFFECTS CONSIDERED	YES		
C.O.C. ACCEPTANCE - 5/5/69	YES	5/5/69	
PARKS OR RECREATION FACILITIES INVOLVED	NO		
RIGHT OF WAY RELOCATION ASSISTANCE	NO		

NOTED
MAINOR C. HOLMES

NOTED
R. H. PRANGE

NOTED
RICHARD UNREIN

NOTED
P. B. Arensmeier

NOTED
DON HARWELL

FAS 741

JOHN A. ANDERSON, P. E.
DIRECTOR OF PUBLIC WORKS
AND COUNTY ENGINEER

NOTED
H. S. COX

THEO. KIJENZI
ASST. COUNTY ENGINEER

NATIONAL ASSOCIATION COUNTY ENGINEERS NACE
CHARTER MEMBER

DEPARTMENT OF PUBLIC WORKS
COUNTY OF MARION
COURTHOUSE
SALEM, OREGON 97301

AREA CODE 503
364-4401, EXT. 53

May 20, 1969

Mr. H. S. Cox
County and City Engineer
Oregon State Highway Department
Salem, Oregon 97310

Attention Mr. Harold Reynoldson

Dear Mr. Cox:

Prior to Marion County Resolution No. 1537, in the matter of widening, altering, and improving of a portion of Lancaster Drive N.E. (Market Road No. 93) from Silverton Road N.E. northerly to the intersection of State Highway 99E, the Marion County Board of Commissioners took into consideration the economic, social, and enviornmental effects before secheduled public hearings were held.

Each property owner was notified by certified mail of the time and place of public hearings together with a map of the proposed design. There being no adverse comments at the hearings, the Resolution was adopted January 3, 1968.

RECEIVED
MAY 21 1969
ENGINEER
COUNTY & CITY DIVISION

Very truly yours,

John A. Anderson
Director of Public Works

im

NOTED
RICHARD UNREIN

NOTED
DON HARWELL

BEFORE THE BOARD OF COUNTY COMMISSIONERS
FOR MARION COUNTY, OREGON

5-7-69

Resolution No. ____

In accordance with Section 141, Chapter 1, Title 23, United States Code, Marion County does hereby resolve and give the following assurances:

1) That every reasonable effort shall be made to acquire the real property by negotiation;

2) That the construction of projects shall be so scheduled that to the greatest extent practicable no person lawfully occupying the real property shall be required to move from his home, farm, or business location without at least 90 days' written notice from Marion County for such acquisition; and

3) That it will be the policy of the County, before initiating negotiations for real property, to establish an amount which is believed to be just compensation, under the law of the State, and to make a prompt offer to acquire the property for the full amount so established.

Dated this 7th day of May, 1969.

MARION COUNTY BOARD OF COMMISSIONERS

By Henry B. Matteson
Chairman

By Pat McCarthy
Commissioner

By Harry Carson Jr.
Commissioner

Ward Dr - S. Silverton Rd Sec
Lancaster Drive
FAS 741

VOL 86 PAGE 418

BEFORE THE BOARD OF COUNTY COMMISSIONERS
FOR MARION COUNTY, OREGON

#1537

In the Matter of the Widening and improving of a portion of Market Road No. 93 (Lancaster Drive N. E.) from its intersection with Market Road No. 26 (Silverton Road N. E.) northerly to a point on its intersection with State Road 99E (Portland Road N. E.) with a right-of-way width of 80 feet and a total distance of 9,900 feet lying in Sections 6,7, and 18 Township 7 South, Range 2W, Willamette Meridian, Marion County, Oregon.

FILED
'68 AUG 7 PM 5 02
BY ____ DEPUTY

ORDER OF IMMEDIATE OPENING

IT APPEARING to the Board of Commissioners from the records and files herein that on the 10th day of July, 1968, this Board entered its order adopting the Viewer's Report herein as modified, and adopted and awarded the amounts set forth in said order as the true damages suffered by the persons through whose premises said road as extended is located, and

IT FURTHER APPEARING that the time within which appeals from said order may be made to the Circuit Court has expired and there were no appeals to the Circuit Court of the State of Oregon for the County of Marion.

IT APPEARING to the Board, and the Board finds that the immediate opening of said road as so relocated and widened is of great public necessity, now, therefore,

IT IS HEREBY ORDERED:

1. That Warrants be forthwith drawn by the County Auditor upon the County Treasurer of Marion County in favor of the persons and in the amount set forth in said order, and Warranty therefor to be drawn upon the Road Funds of the County, and

2. That said road as relocated and widened be and it hereby is established as a County Road and public highway.

Dated and entered this 7th day of August, 1968.

BOARD OF COUNTY COMMISSIONERS

OF MARION COUNTY, OREGON

Harry Carson Jr.
Commissioner

Henry C. Mattson
Commissioner

Pat McCarthy
Commissioner

FORM E-30 BDM 10-68 SP*23401-734

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
May 7, 1969

To: H. S. Cox
County & City Engineer
B U I L D I N G

SUBJECT: Silverton Road-Ward Drive
Section Lancaster Drive
FAS 741 Marion County

In response to Mr. Prange's letter of March 28, we have submitted to the Mid-Willamette Valley Council of Governments the Silverton Road-Ward Drive Section of Lancaster Drive for their review in accordance with IM 21-12-67. Attached is a copy of their review.

In the third paragraph they indicate that the Salem Area Transportation Study recommends a minimum right-of-way width of 90 feet for arterials. Inasmuch as the subject project has 80 feet of right-of-way, they mentioned that the elimination of the provision for on street parking be given serious consideration. In discussing this paragraph with Dave McDonald of the Council of Governments, he pointed out that this statement was not made to slow down the programming of this project. In fact he hoped that a rebuttal comment from the county was not necessary and that programming could proceed immediately.

The intent of mentioning these Transportation Study's suggested right-of-way was to point out the need for additional right-of-way in the Ward Drive-Pacific Highway East Section. They made this recommendation in order that consideration be given to acquire the required right-of-way early before rapidly rising land costs prohibits the purchase of this land.

L. E. George
Assistant Traffic Engineer

Attachment

RER:sw

RECEIVED
MAY 7 - 1969
ENGINEER
COUNTY & CITY DIVISION

NOTED
R. H. PRANGE

RECEIVED
JUN 18 1969

JOHN A. ANDERSON, P. E.
DIRECTOR OF PUBLIC WORKS
AND COUNTY ENGINEER

THEO. KUENZI
ASST. COUNTY ENGINEER

NACE
CHARTER MEMBER

SU-528(3)

7283

DEPARTMENT OF PUBLIC WORKS
COUNTY OF MARION
COURTHOUSE
SALEM, OREGON 97301

AREA CODE 503
364-4401, EXT. 53

May 6, 1969

The Honorable Board of
County Commissioners
Marion County Courthouse
Salem, Oregon 97301

Gentlemen:

I am greatly concerned about our Lancaster Drive improvement between Silverton Road and Ward Drive.

1. We submitted our application to the State Highway Department for a Federal Aid Secondary project on August 7, 1968.

2. We acquired 80 feet of right-of-way on the entire remaining section of Lancaster Drive on August 7, 1968.

3. On April 2, 1969, the State Highway Department wrote the Council of Governments asking for review.

4. On May 5, 1969, the Council of Governments responded with a letter that has various implication to it, one of which could possibly cause a delay in the project although the Council of Governments staff says this is not their intention. Copies of correspondence are attached hereto.

My great concern lies in the fact that we have been unable to get on the May 15 bid opening for this construction. The next regular bid opening date is on June 26. A delay of more than a month, I feel, will cost us at least $10,000 in higher bids besides the possibility that the work will not be completed prior to the opening of school this fall.

NOTED
TOM EDWARDS

Fred is handling done

It is my opinion that the request should never have gone to the Council of Governments since it is part of the Salem Area Transportation Study report and has been already accepted by the Council of Governments.

In view of the above, I would recommend that the Board of County Commissioners request the State Highway Commission to call for a special bid opening date at the earliest possible time.

Very truly yours,

ORIGINAL SIGNED BY
JOHN A. ANDERSON

John A. Anderson
Director of Public Works

im
cc:Wes Kvarsten, Council of Governments
Tom Edwards, State Highway Department
Enclosures

RECEIVED
MAY 8 1969
OFFICE OF
STATE HIGHWAY ENGINEER

MID WILLAMETTE VALLEY
COUNCIL OF GOVERNMENTS
Room 19 / Marion County Courthouse, Salem, Oregon 97301 / Telephone AC 503/581-1574
W. J. KVARSTEN, A.I.P.
DIRECTOR

May 5, 1969

Mr. Forrest Cooper
Oregon State Highway Engineer
Highway Building
Salem, Oregon 97310

Attention: Mr. Robert E. Royer

Dear Sir:

As requested, we have reviewed the proposed improvement of Lancaster Drive (FAS 741). As described in the project data sheet the level of improvement is consistent with work already accomplished on other segments of the same arterial street.

For its entire length Lancaster Drive has been designated as an arterial street in the 1962 Preliminary Land Use Plan for the Salem area. Thus the improvement of the route to arterial standards is consistent with the Land Use Plan. Future land uses as depicted in the Plan are shown on map 1.

As described in the project data sheet, the level of improvement is consistent with work already accomplished on other segments of Lancaster Drive. It should be noted that the recently published Salem Area Transportation Study (SATS), which also designates Lancaster Drive as an arterial, (See Oregon State Highway Commission, Transportation Plans, Volume 3, [Salem, 1969]), includes a set of minimum desirable design standards for streets that are in excess of the proposed improvements. The SATS standards would require a minimum 90' right-of-way as opposed to the planned 80' ROW. The 80' ROW thus makes no allowance for a publicly owned border strip that could be used for street tree planting. For the subject section of the Lancaster Drive it is recommended that the elimination of the provision for on street parking be given serious consideration.

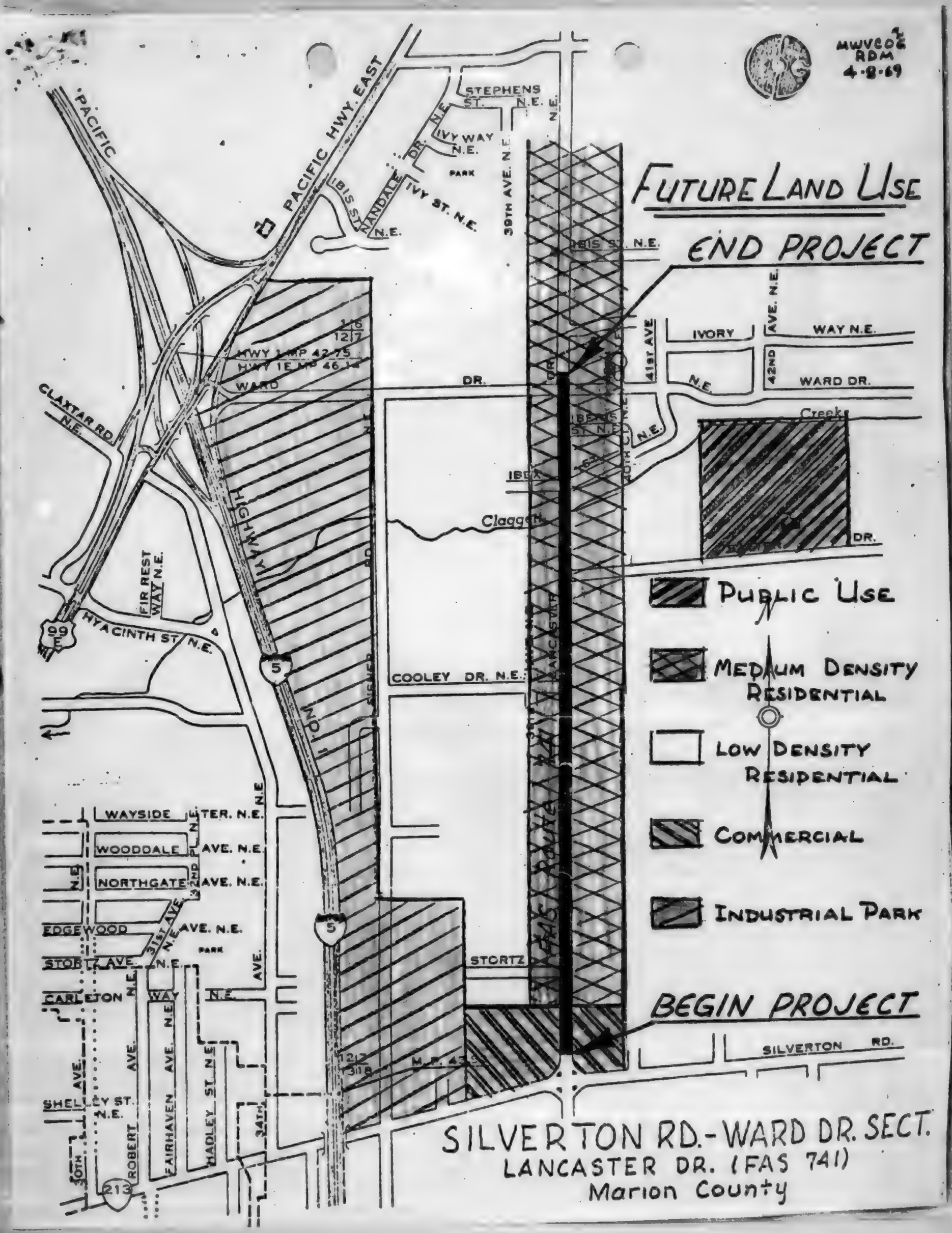
The improvement of Lancaster Drive from Silverton Road to Ward Drive will leave a 0.74 mile section of Lancaster Drive yet to be brought to urban arterial standards under the SATS plan (see project 7). It is recommended that action to acquire the 90' ROW for improvement of the remaining section be undertaken in the near future. This recommendation is made with a sense of urgency, because of rapidly rising land acquisition costs in the Salem area.

Yours very truly,

W. J. Kvarsten, Director
Mid Willamette Valley
Council of Governments

WJK/ca

Encl:


MWVCOG
RDM
4-8-69
FUTURE LAND USE
END PROJECT
PACIFIC HWY. EAST
PACIFIC
STEPHENS ST. N.E.
IVY WAY N.E.
PARK
IVY ST. N.E.
IBIS ST. N.E.
NANDALE
39TH AVE. N.E.
DR. N.E.
CLAXTAR RD. N.E.
WARD
DR.
HIGHWAY
FIR REST WAY N.E.
HYACINTH ST. N.E.
99 E
5
COOLEY DR. N.E.
IVORY
WAY N.E.
41ST AVE
42ND
WARD DR.
N.E.
Creek
DR.
PUBLIC USE
MEDIUM DENSITY RESIDENTIAL
LOW DENSITY RESIDENTIAL
COMMERCIAL
INDUSTRIAL PARK
WAYSIDE TER. N.E.
WOODDALE AVE. N.E.
NORTHGATE AVE. N.E.
EDGEWOOD AVE. N.E.
STOB T AVE. N.E.
CARLETON WAY N.E.
SHELLEY ST. N.E.
ROBERT AVE.
FAIRHAVEN AVE. N.E.
HADLEY ST. N.E.
34TH
30TH
213
STORTZ
BEGIN PROJECT
SILVERTON RD.
M.P. 43
SILVERTON RD.-WARD DR. SECT.
LANCASTER DR. (FAS 741)
Marion County

NOTED
H. S. COX

May 1, 1969
(date)

Marion County Board of Commissioners
Courthouse
Salem, Oregon 97301

Attention: Mr. John A. Anderson,
Public Works Director

In order to comply with requirements of the Bureau of Public Roads covering protection of public resources such as recreational areas, historical sites, wild life refuges, or any other facility in which the public has a specific interest, it is required that local public authorities should be consulted regarding the impact on these resources of a planned highway improvement.

Would you please fill out the form below regarding these resources and return it to the Oregon State Highway Department, County and City Division, State Highway Building, Salem, Oregon (97310). Retain the second copy for your records.

NOTED
DON HARWELL

NOTED
MAYNOR C. HOLMES

Highway FAS 741

Section Ward Drive-Silverton Road: Grade & Pave

Do you know of any public organization or quasi-official organizations that might be opposed to this project on the grounds of interference with recreational, historical, or public resources? Yes ☐ No ☒

If answer is yes, please list organizations:

RECEIVED
MAY 5 - 1969
ENGINEER
COUNTY & CITY DIVISION

May 2, 1969
(date)

By Henry L. Mattson

By H. M. McCarthy
Commissioner

By Harry Carson
Commissioner

cc: L. H. Young
Attn: Duane Ridings

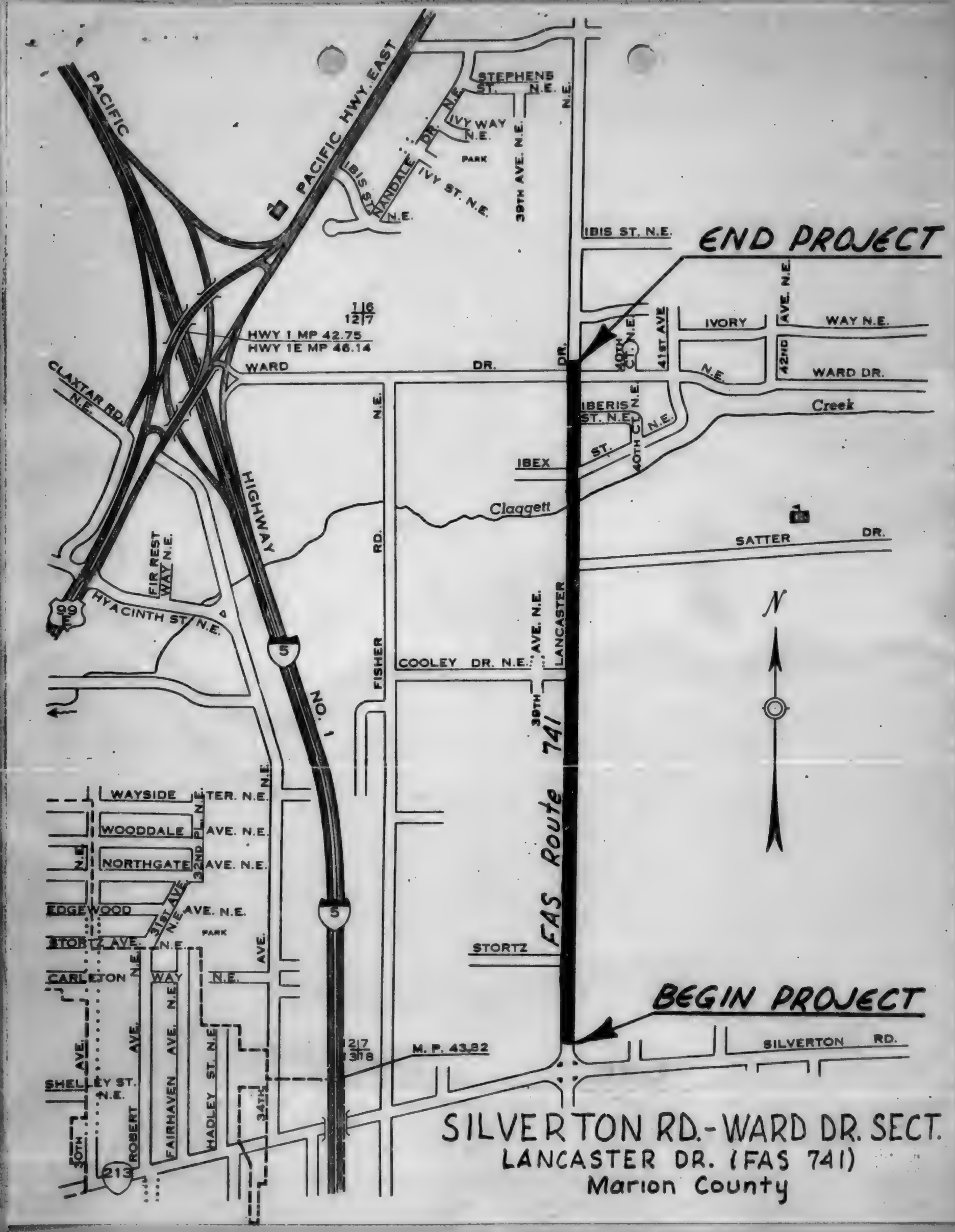
NOTED
RICHARD UNREIN

NOTED
P. R. Accounting

PROJECT DATA

Silverton Road-Ward Drive Section
Lancaster Drive, FAS 741
Marion County

Project Description:	Beginning at Silverton Road N.E., thence northerly along Lancaster Drive to Ward Drive N.E.
Length of Project:	1.0 mile.
Type of Project:	Reconstruct and widen existing two-lane roadway to a four-lane facility by grading, draining, base surfacing, curbing and paving 68 feet between curbs, with 5-foot asphaltic concrete foot paths behind curbs.
Estimated Cost:	$300,000
Number of Lanes:	Four 12-foot travel lanes, two 8-foot parking lanes and a 4-foot center median.
Interchanges:	None
Street Intersections:	All side streets and cross streets will intersect the facility at grade. Wide center median will be provided for left-turn movements where warrented.
Street Closures:	None
Right of Way:	80-foot; non-access control.
Traffic:	Existing ADT: 3,500 (average) 1982 ADT: 7,900
Future Facilities:	County proposes to complete the four-lane facility from Ward Drive to Pacific Highway East in the near future.
Area Study:	The project is compatible with SATS Transportation Plan, 1982. The improvement of Lancaster Drive is listed as Project 7 in the Plan.



SILVERTON RD.-WARD DR. SECT.
LANCASTER DR. (FAS 741)
Marion County

OREGON STATE HIGHWAY DEPARTMENT
CONSTRUCTION DIVISION
SOILS AND GEOLOGY SECTION
PROJECT BASE DESIGN

Section LANCASTER DRIVE (WARD ROAD - SILVERTON ROAD) Highway F.A.S. 741 County MARION Prefix 524-1433

Res. Engr. E.J. Hall Approx. Length 1.0± Miles. Sta. _____ to Sta. _____ Date 2-3-69

Mea n

Truck A.D.T. 249 Traffic Coefficient 7.8 18 kip s.a. per day 53.8.

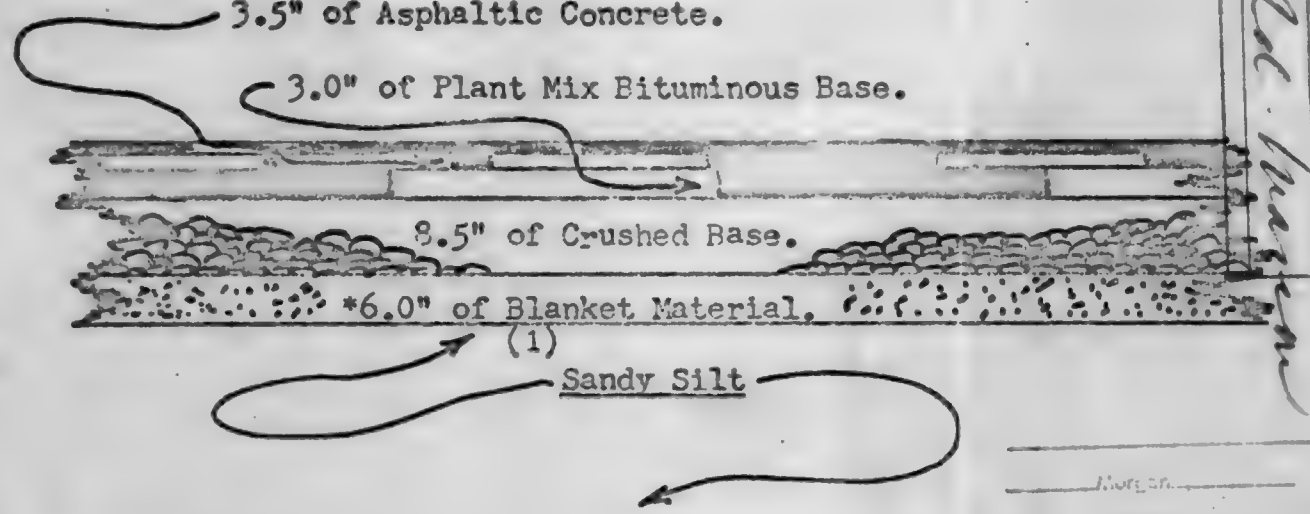
Annual Precipitation 40"± Frost Penetration - - - - - - - -.

NEW WORK

(1)
Typical Soil
34 LL
6 PI
93 %P 10
88 %P200
7 %Gravel
2 %C Sand
3 %F Sand
69 %Silt
19 %Clay
6 "R" Value

AASHO CLASSIFICATION:
A-4 (8)

MATERIAL SOURCES:
To be determined by the Engineer.



	CBE Total Req.	Credit	Actual Thick.	
		0.0	3.5	AC
		2.5	3.0	PMBB
		5.5	8.5	Cr Base
		5.0	*6.0	Blanke
	26.0	26.0	21.0	

Routing

Morgan
Decker
Bond
Walker
Buehme
Johnson

RECEIVED
FEB 7 1969
CONSTRUCTION DIVISION

Swan
Dickman
Stahl

See Page 3 for remarks.

cc:
B.P.R.
Asst. State Highway Engineer
Construction Engineer
Engineer of Materials
Division Engineer
Resident Engineer
Design Engineer
Specifications Engineer
Final Design Engineer
Division Geologist
County - City (2

Submitted by [signature] for Staff Assistant

Recommended by [signature] Asst. Engineer of Materials

Recommended by [signature] Asst Construction Engineer

Approved by [signature] Asst. State Highway Engineer

OREGON STATE HIGHWAY DEPARTMENT
CONSTRUCTION DIVISION
SOILS AND GEOLOGY SECTION
PROJECT BASE DESIGN

Section LANCASTER DRIVE (WARD ROAD - SILVERTON ROAD) Highway F.A.S. 741 County MARION Prefix 524-1433

Res. Engr. E.J. Hall Approx. Length 1.0± Miles. Sta. _____ to Sta. _____ Date 2-3-69

Truck A.D.T. _____ Traffic Coefficient 6.0 18 kip s.a. per day 5.8.

Annual Precipitation 40"± Frost Penetration - - - - - - -.

(1)
Typical Soil
34 LL
6 PI
93 %P 10
88 %P200
7 %Gravel
2 %C Sand
3 %F Sand
69 %Silt
19 %Clay
6 "R" Value

AASHO CLASSIFICATION:
A-4 (8)

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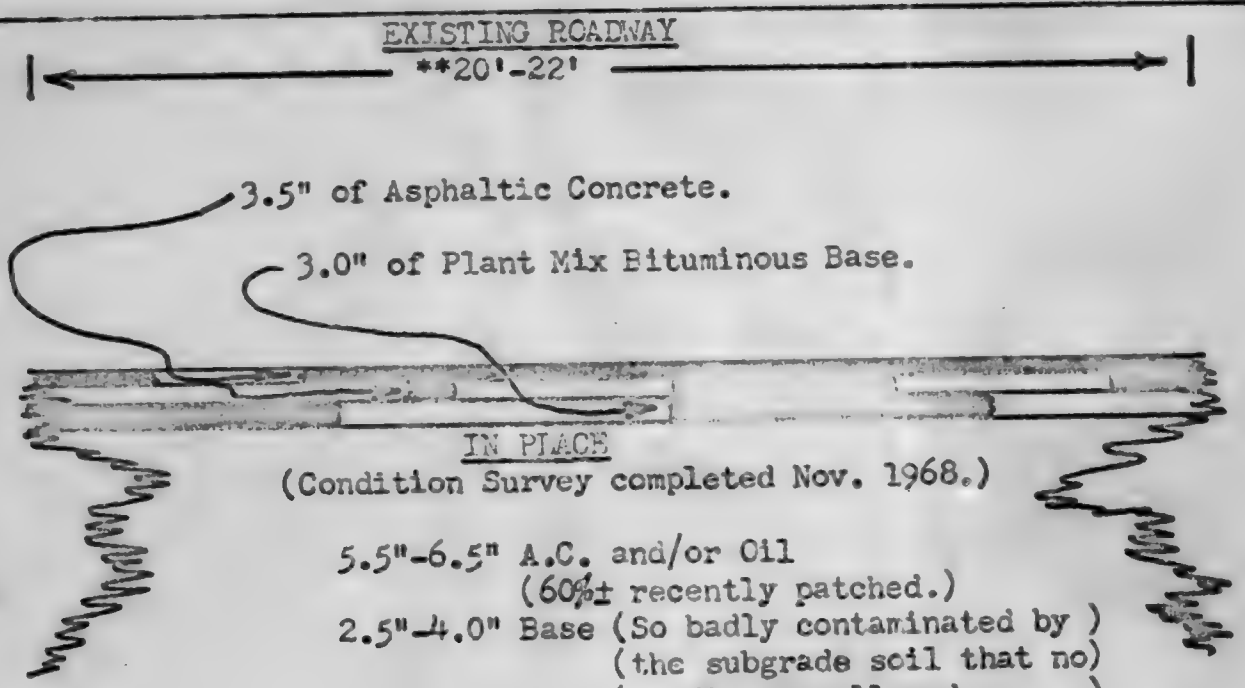

**Discretion of the Resident Engineer.

CBE Total Req.	Credit	Actual Thick.	
	7.0	3.5	AC
	5.5	3.0	PMBB
	IN PLACE		
		Average	
	7.5	6.0	AC and or Oi
	0.0	2.0	Base
20.0	20.0	14.5	

cc:

SECTION: Lancaster Drive
Ward Road - Silverton Road

HIGHWAY: FAS 741

COUNTY: Marion County

"OTHER ROADS"

Traffic Coefficient	A.C. Wearing Surface	P.M.B.B. or XXXXX.	3/4"-0 Level	Crushed Base	Blanket XXX. or XXXX.	"CBE" Total Requirement	Actual Thickness
6.0 - 7.0	3.0"	3.0"	---	4.0"	*6.0"	21.5"	16.0"
4.8 - 2.0	2.0"	---	2.0"	6.5"	*6.0"	18.5"	16.5"
Cars Only	2.0"	---	2.0"	4.0"	*4.0"	13.5"	12.0"

Remarks:

Two test holes in the existing roadway were considered adequate to determine the depth of the A.C. & base material as shown on Page 2.

A Traffic Coefficient equal to 10% of the total truck traffic was used to establish the depth of overlay required for the "Inside Lanes". (See attached Traffic Analysis Sheet.)

*Tests of the subgrade indicate that a blanket course is needed. To help prevent infiltration of the fine-grained soil into the base material, the following is recommended for a blanket material:

Top Size 1.0" maximum.
15% minimum P #40 sieve.
8% maximum P #200 sieve.

Should substitutions be made use the "CBE" Total Requirement column to obtain the "Total Thickness Required" and the table below for values:

1.0"	Asphaltic Concrete	=	2.0"	Crushed Base
1.0"	Plant Mix Bituminous Base	=	1.8"	Crushed Base
1.0"	Cement Treated Base	=	-- "	Crushed Base
1.0"	Oil Mat or	=	1.1"	Crushed Base
1.0"	Stone Subbase &/Blanket (Per Standard Specifications plus Supplementals)	=	0.8"	Crushed Base
1.0"	Lime Treated Subgrade	=	-- "	Crushed Base

Credits For Existing Roadway

1.0"	Asphaltic Concrete or Oil	=	1.25"	Crushed Base

SECTION: Lancaster Drive
Ward Road - Silverton Road

HIGHWAY: FAS 741

COUNTY: Marion County

"OTHER ROADS"

Traffic Coefficient	A.C. Wearing Surface	P.M.B.B. ~~or XXXX.~~	3/4"-0 Level	Crushed Base	Blanket ~~XXX.~~ ~~or~~ ~~XXXX.~~	"CBE" Total Requirement	Actual Thickness
6.0 - 7.0	3.0"	3.0"	---	4.0"	*6.0"	21.5"	16.0"
4.8 - 2.0	2.0"	---	2.0"	6.5"	*6.0"	18.5"	16.5"
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1.0"	Stone Subbase &/Blanket (Per Standard Specifications plus Supplementals)	=	0.8"	Crushed Base
1.0"	Lime Treated Subgrade	=	— "	Crushed Base

Credits For Existing Roadway

1.0"	Asphaltic Concrete or Oil	=	1.25" Crushed Base

TRAFFIC ANALYSIS

SECTION: Lancaster Drive
Ward Road - Silverton Rd.

HIGHWAY: FAS 741

COUNTY: Marion

3600 Present ADT (1969)

4.5 Percent Trucks

AXLES	TWO WAY TRUCK ADT	EXPANSION FACTOR	TOTAL TADT	MEAN TADT	ONE WAY EWL	AVERAGE ANNUAL EWL
2	125	2.1	263	194	450	87,300
3	20	2.1	42	31	1000	31,000
4	5	2.1	11	8	1250	10,000
5	10	2.1	21	16	3180	50,880
6	- - -	- - -	- -	- -	2570	- - - -
				249	TOTAL	

TOTAL AVERAGE ANNUAL DESIGN EWL 179,180

TWENTY YEAR EWL 3,583,600

TRAFFIC COEFFICIENT 7.8

10% of Truck Traffic

Twenty Year E.W.L: 358,360

Traffic Coefficient: 6.0

TRAFFIC ANALYSIS

SECTION: Lancaster Drive
Ward Road - Silverton Rd.

HIGHWAY: FAS 741

COUNTY: Marion

3600 Present ADT (1969)

4.5 Percent Trucks

AXLES	TWO WAY TRUCK ADT	EXPANSION FACTOR	TOTAL TADT	MEAN TADT	ONE WAY EWL	AVERAGE ANNUAL EWL
2	125	2.1	263	194	450	87,300
3	20	2.1	42	31	1000	31,000
4	5	2.1	11	8	1250	10,000
5	10	2.1	21	16	3180	50,880
6	- - -	- - -	- -	- -	2570	- - - -
				249	TOTAL	

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TRAFFIC COEFFICIENT 7.8

10% of Truck Traffic

Twenty Year E.W.L: 358,360

Traffic Coefficient: 6.0

SECTION: Lancaster Drive
Ward Road - Silverton Rd.

HIGHWAY: FAS 741

COUNTY: Marion

PAVEMENT TYPE SELECTION

Principal Factors Governing Selection

1. Traffic Classification: See attached sheet
2. Soils Characteristics: See design chart attached
3. Weather: See design chart attached
4. Performance of Similar Pavements in Area: Good X Fair _____ Poor _____
   Remarks: _____
5. Cost Comparisons: See remarks

Secondary Factors Governing Selection

6. Adjacent Existing Pavements: A.C. or Oil
7. Stage Construction: Not applicable
8. Depressed, Surface, or Elevated Design: Surface
9. Conservation of Aggregates: See remarks
10. Stimulation of Competition: See remarks
11. Construction Consideration: See remarks
12. Municipal Preference, Participating Local Government Preference, and Recognition of Local Industry: County prefers A.C.
13. Traffic Safety: Not a problem
14. Availability of an Adaption of Local Materials or of Local Commercially Produced Paving Mixes: Local materials are adaptable to this type construction

CONCLUSION AND REMARKS:

No cost comparison made for this project as the proposed plans are for widening an existing 2-lane facility to 4 lanes. The existing roadway will be incorporated into the "new work".

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COMMISSIONERS
GLENN L. JACKSON, CHAIRMAN
MEDFORD
FRED W. MILLER, MEMBER
PENDLETON
THADDEUS B. BRUNO, MEMBER
PORTLAND

SU-528(3)
7283

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

November 15, 1968

Mr. David Vargas
City Engineer
City Hall
Salem, Oregon 97301

Dear Sir:

Pursuant to telephonic discussion this date, enclosed are two copies of "FAS-C Project Data" forms.

It is the understanding that Salem is contemplating improvements on various streets or roads within the city in the near future, and two roads of primary importance are Market Street and Center Street.

Market Street easterly of Capitol Street, and Center Street easterly of 12th Street are on the Federal Aid Secondary System (county portion) and are eligible for projects partially financed from these funds. The individual county is solely responsible as to what roads are to receive these funds; therefore, if the City of Salem requires consideration of FAS participation on these routes, all negotiations would have to be handled by and through the Marion County Department of Public Works and Board of Commissioners.

As of this date, Marion County's FAS-C program is currently over-programmed by approximately $56,600 and the County has under consideration the extension of the four-lane section on Lancaster Drive between Ward Drive and US 99E near Hayesville.

I trust this will adequately answer any questions you may have regarding this matter.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

NOTED
FORREST COOPER

H. B. Cox
County & City Division Engineer

DBH:mm
cc: Marion County Board of Commissioners
John Anderson, Public Works Director
bc: Forrest Cooper
R. L. Porter
F. B. Klaboe
Victor Wolfe
D. J. Barbee
R. D. Asburry

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STATE HIGHWAY ENGINEER

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NOV 6 - 1968
FOR FILING

11-1-68

PREFIX 524-1433

SU-528(3)
7283

LOCATION PROSPECTUS
WARD DRIVE-SILVERTON ROAD SECTION
LANCASTER DRIVE NORTHEAST
MARION COUNTY

HIGHWAY: Lancaster Drive; Federal-aid Secondary No. 741.

TERMINI: The northerly terminus is at the junction of Ward Drive and Lancaster Drive. The southerly terminus is at the junction of Silverton Road and Lancaster Drive.

LENGTH: 0.97 mile by existing facility.

PROGRAM: FAS-C project.

NARRATIVE: This will be a location survey to prepare plans, specifications and estimates for widening and resurfacing along the existing centerline to four lanes.

CHARACTERISTICS: Existing ADT 3,500; projected 20-year ADT 7,000.

STANDARDS: Class A(4). Deviations from State standards are anticipated in shoulder width.

TYPICAL SECTION: Four 12-foot lanes, 8-foot parking, and 4-foot median with 5-foot sidewalks. Parking lanes will be paved full depth. Storm sewers will be installed.

BRIDGE: No major stream crossings.

ACCESS: Direct to pavement. Limited as to location, width and unrestricted land use.

BASE DESIGN: Tentative base design for construction is:

3-1/2"		A. C.
3	"	P. M. B. Base
7	"	Bottom Course Base
6	"	Blanket Course
19-1/2"		

NOTED
TOM EDWARDS

MATERIAL SOURCE: Local sources.

ADD'L FACILITIES: No railroad crossings.

AGREEMENTS: Routine FAS-C agreement. Routine utility adjustments.

STATE PARKS OR ROADSIDE REST AREAS: None affected.

November 1, 1968
Attach

Mr. R.E. Simpson (3)
Mr. Forrest Cooper
Mr. Tom Edwards
Mr. F.B. Klaboe
Mr. V.D. Wolfe
Mr. D.J. Barbee
Mr. F.B. Crandall
Mr. E.S. Hunter
Mr. Ivan Merchant (4)
Mr. D.H. Moehring (3)
Mr. F.D. Morgan
Mr. L.H. Young
Mr. R.D. Asburry (4)
Mr. Mark Astrup
Mr. Jack Cartwright (2)
Mr. Dick Chase
Mr. Si Cox (2)
Mr. W.N. Hackleman
Mr. Val Johnson
Mr. A.D. Olson
Mr. James Owens
Mr. Jck Rowland
Mr. Robert Royer
Mr. Bill Sample
Mr. Roy Stein
Mr. W.H. Tebeau
Mr. O.C. Turner
Mr. F.W. Yarbrough (2)

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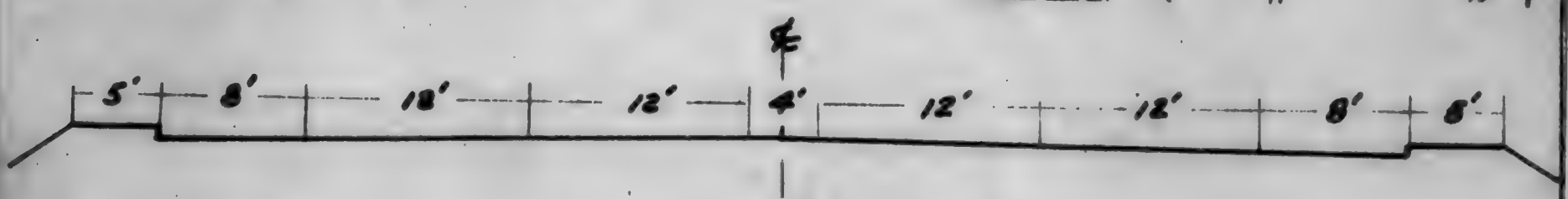
STATE HIGHWAY ENGINEER



TYPICAL SECTION

PROSPECTUS MAP
WARD DR - SILVERTON RD SEC.
LANCASTER DR. FAS 741
MARION COUNTY
NOV. 1968

8-30-68

MARION COUNTY
PROPOSED PROJECT (1968 Funds)

FAS 741 - Lancaster Drive; Silverton Road-Ward Drive Section.
Clear, grade, drain, base, and pave, approximately 1.155 miles;
$240,000.

This project is to consist of clearing, grading, drainage, basing, and paving with A.C. a 68-foot curbed roadway with A.C. footpaths.

This section is to be similar to the recently completed adjacent section of Sunnyview Avenue to Silverton Road.

Aggregate from private source.

The County will have removed the marketable timber prior to contract time as part of their right of way obligation. There is no additional right of way.

68-g
8/30/68

HIWAY COMMISSION
APPROVED ON
OCT 1 - 1968

PROPOSED PROJECT
FAS 741
MARION COUNTY
MIDDLE GROVE
BADGER
CORNER
HIGHWAY
SUNNYVIEW
PACIFIC
HAVERHILL
WATSON
CAROLINA
SALEM
STAYTON
N

RECEIVED
AUG 16 1968
ENGINEER
COUNTY & CITY DIVISION

COUNTY ROAD FAS PROJECT DATA

8-7-68

1. Name of County Marion FAS No. 741

2. County Road Name Lancaster Drive N. jE.

3. Section Name Silverton Road to Ward Drive Length 1.155 miles, approx

4. Type of Project Reconstruction with curb and sidewalks (AC.)

5. Survey to be done by: State _____ County X
(NOTE: If project is canceled, County must pay for survey.)

PROJECT DATA -

6. Has base design been given to County? Yes ____ No X

Will it be furnished? Yes ____ No X

7. Wearing Surface: Type AC Width 68' Shoulders curb and walk

8. Grading & Drainage:

By County ____ County Date of Completion _____ By Contract X

9. Bottom Base Course:

By County ____ County Date of Completion _____ By Contract X

10. Leveling Course:

By County ____ County Date of Completion _____ By Contract X

11. Wearing Surface:

By County ____ County Date of Completion _____ By Contract X

12. Clearing:

By County ____ County Date of Completion _____ By Contract X

13. Is there any merchantable timber on right-of-way? Yes ___ No X

14. Will timber be reserved for owner? Yes X No X - See Note on Sheet 4

15. Will timber become property of contractor? Yes X No X

Remarks Some timber will be reserved for owner, some will become property of contractor.

MATERIAL SOURCE -

16. Gravel X Quarry _____ Cinders _____

17. Owner: County _____ State _____ Private X

18. Location: _____ Section ____ Township ____ Range ____ W.M.

CAR 61-2

19. Materials furnished by County: Borrow____ Select Topping____

Base Course____ Level Course____ Mineral Aggregates____

20. Miscellaneous Items: _____

Remarks:_____

_____

FINANCIAL- -

21. Estimated Cost: $_____

22. Available FAS Funds: $_____

23. Date Match Money is Available: 1968-1969 budget

24. Will there be any 100% County Money? Yes____ No X

25. Maximum Amount of 100% County Money Available: $_____

26. Date County Requests Letting: April 1969

Remarks_____

_____

RIGHT-OF-WAY- -

27. Is any additional right-of-way needed? Yes____ No X

28. Will right-of-way be acquired by: Resolution____ or Deed____

29. Should State prepare options? Yes____ No X

30. Should State prepare centerline descriptions for acquiring right-of-way by resolution? Yes____ No X

31. Should material source site be included in right-of-way descriptions? Yes____ No X

32. Does project run inside city? Yes____ No X
(NOTE: If right-of-way is procured in community with post office or in a city, an opportunity for hearing must be afforded. [redacted])

33. Are there any utilities (electric, water, gas, sewer, etc.) on private land? Yes____ No X
(NOTE: County must move all utilities located on present right-of-way.)

Remarks_____

CCR 61-2

RAILROADS- - - -

49. (b) Timing (Cooperative project by County, finance, irrigation, industrial usage, outside projects)

Explain: _____

_____

_____

_____

50. (c) Surveys (Coordination with outside surveys)

Explain: _____

_____

_____

MISCELLANEOUS -

51. Does County wish rounding of cutbanks? Yes___ No x

52. Does County wish sight posts installed? Yes___ No x

53. Does County wish guard rail installed? Yes___ No X

54. Does County wish seeding and mulching incorporated into job?

Yes___ No X

NOTE: Approach fills for pile bent structures must be in place prior to bridge construction.

Note: County will take care of item 14 as right of way obligation.

Marion County

August 7, 1968 Date

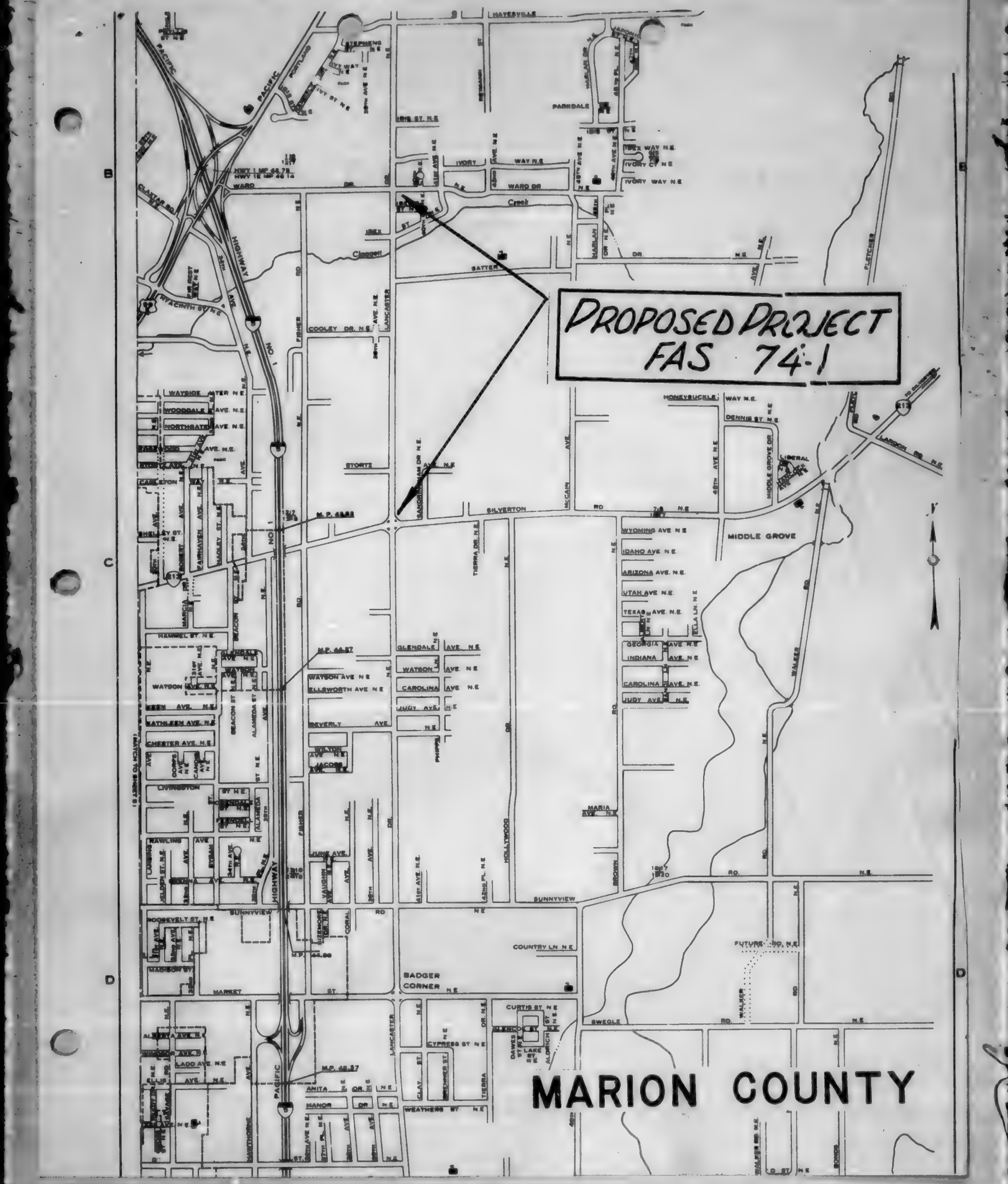
By Harry Carson Jr.
Judge or Commission Chairman

By John A. Gartman
County Engineer

Robert H. Tarrige
O.S.H.D. Field Engineer

Date 8-16-68

CCR 4-8


PROPOSED PROJECT
FAS 74-1
MARION COUNTY
MIDDLE GROVE
HAYESVILLE
PARKDALE
IVORY WAY N.E.
WARD DR.
Creek
SATTER
HYACINTH ST. N.E.
COOLEY DR. N.E.
STORITZ
SILVERTON RD. N.E.
MONEYSUCKLE WAY N.E.
DENNIS ST. N.E.
LIBERAL
WYOMING AVE N.E.
IDAHO AVE N.E.
ARIZONA AVE. N.E.
UTAH AVE N.E.
TEXAS AVE. N.E.
GEORGIA AVE N.E.
INDIANA AVE. N.E.
CAROLINA AVE. N.E.
JUDY AVE. N.E.
GLENDALE AVE. N.E.
WATSON AVE. N.E.
ELLSWORTH AVE N.E.
BEVERLY AVE.
MARIA AVE. N.E.
SUNNYVIEW RD.
COUNTRY LN. N.E.
BADGER CORNER N.E.
FUTURE RD. N.E.
SWEGLE RD. N.E.
CURTIS ST. N.E.
CYPRESS ST. N.E.
WEATHERS ST. N.E.
ANITA DR. N.E.
MANOR DR. N.E.
LADD AVE. N.E.
ALBERTA AVE. N.E.
WOODDALE AVE. N.E.
NORTHGATE AVE. N.E.
WAYSIDE TER N.E.
CARLTON WAY N.E.
WATSON AVE. N.E.
KATHLEEN AVE. N.E.
CHESTER AVE. N.E.
LIVINGSTON
NAWLINS AVE.
ROOSEVELT ST. N.E.
MADISON ST.
MARKET ST.
HANNEL ST. N.E.
SHELBY ST. N.E.
HIGHWAY NO. 1
PACIFIC HIGHWAY
FISHER RD.
LANCASTER
McCAIN AVE.
TIERRA DR. N.E.
HOLLYWOOD DR.
WALKER RD.
BROWN RD.
M.P. 44.88
M.P. 44.97
M.P. 45.82
M.P. 48.37
B
C
D

REPORT ON SURVEY

WARD DRIVE - SILVERTON ROAD SECTION
Lancaster Drive, N. E.
-Marion County

The purpose of this survey was to obtain field data for the preparation of plans, specifications, and estimates for the reconstruction of Lancaster Drive between Ward Drive and Silverton Road.

The overall length of the survey is 0.97 miles and follows the existing street alighment. The line is all on tangent, with a maximum gradient of 0.78%. The southerly end of the project will join an existing four lane section approximately 400 feet northerly of the intersection of Silverton Road and Lancaster Drive, and the northerly end of the project will be at the northerly edge of the intersection of Ward Drive and Lancaster Drive. Existing ADT on this section is 3,500.

Construction of this section will provide a complete four lane facility from Four Corners on the south to Ward Drive on the north. This will leave a short section about 0.8 mile yet to be reconstructed to reach the intersection of Lancaster Drive and Highway 99E.

The typical section for this location is a 68 foot curbed street section,consisting of four 12 foot lanes, 8 foot parking, and a 4 foot median with 5 foot wide sidewalks.

Storm sewers will be installed throughout the project. In areas where the new construction will cut off the drainage from abutting properties, the county has requested that the storm sewer pipes to the catch basins be stubbed out back of the sidewalk. This is the same plan that was used on the previously constructed sections to the south.

At the request of Marion County, the transverse slope has been varied from state standards in that the slope from the edge of the inside travel lane, at 14 feet, to the face of the curb at 34 feet, is a constant 0.03

per foot. Due to the minimum gradient of the road, it will be necessary in a few areas to vary the slope of the parking lane so as to obtain drainage in the gutter line.

The base design for the new work consists of 6 inches of blanket material, 8½ inches crushed base material, 3 inches of plant-mix bituminous base, and 3½ inches of asphaltic concrete.

Finish grade will be approximately parallel to the existing grade line. The twenty foot width of existing pavement will be overlaid with 3 inches of PMBB and 3½ inches of asphaltic concrete. Approximately 760 tons of A.C. will be required for patching and smoothing out the grade line.

An A.C. sidewalk, four and one-half feet in width, is to be constructed back of the Type "A" monolithic curb and gutter. Driveways are to be A.C., modified Type A-1.

Several power poles, telephone poles, and mailboxes will require relocation. There is a 4 inch gas line on the east side, approximately 27 feet right of centerline and 30 inches in depth which should not interfere with construction. Also there is a 2 inch gas line, 12 feet right of centerline, At Ward Drive intersection which the gas company will relocate during construction.

This location does not conflict with any historical or recreational areas, state or county parks, or any wildlife refuges.

Estimated cost of construction is $307,717.00.

SU-559(2) N. Delaware Ave.-N. Woolsey 1969
Ave. (Ptld.) Sec., of FAS 940,
#7284 (Columbia Blvd.) (Grad. & Pav.)

Copy
4168

11-4-71

FORM FR-33C (REV. 3-68)

OSHD(Morgan)
Region
Wash DC

NOV 22 1971

FOR FILING
(11-5-71)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

FINAL INSPECTION AND ACCEPTANCE OF FEDERAL-AID PROJECT CONSTRUCTED UNDER 1954 SECONDARY ROAD PLAN

(PPMs 30-5 and 20-6.1)

NOV 16 1971

REGIONAL OFFICE

INSTRUCTIONS - Submit original and 3 copies to the Public Roads Division Office

NOTICE OF COMPLETION AND ACCEPTANCE BY STATE HIGHWAY DEPARTMENT

SIGNATURE: R. H. Morgan

TITLE: Construction Engineer

BUREAU OF PUBLIC ROADS INSPECTION MADE BY: C. T. Christianson, Area Engineer

IN COMPANY WITH: A.Harwood, Reg Const Engr; C.Cummings, Proj Engr; R.Flennigan, Insp; L.Valdez,Trne

CONTRACTOR'S NAME: Cascade Construction Co.

STATE	REGION NO.
Oregon	8

COUNTY	PROJECT NO.	DATE OF INSPECTION	CONTRACT AMOUNT
Multnomah	SU 359(2)	10-23-70	$ 350,290.60

DESCRIPTION OF IMPROVEMENT AS PROGRAMED

Grade, drain, and high type pavement with curb and 14' paved median. Four 11' lanes with 3' shoulders. Section approved due to physical restrictions that are not feasible to relocate. Parking will be prohibited.

IMPROVEMENT AS CONSTRUCTED

ROADBED (Width _____ feet)			STRUCTURES OVER 20-FOOT SPAN	
TYPE CODE NUMBER	NET LENGTH (Miles)	BASE SURFACING WIDTH (Feet)	TYPE CODE NUMBER	NET LENGTH (Miles)
6201	1.00	64	-	-

REMARKS: *The project has been completed in apparent conformity with the state standards and procedures approved in accordance with the 1954 secondary road plan.*

N. DELAWARE-N.WOOLSEY SECTION
COLUMBIA BLVD.
FAS 940

This project provided for the widening of Columbia Blvd. in Portland to a four lane expressway type facility. This work is part of a continuing plan to provide increased capacity and safety for traffic serving this expanding industrial and commercial area.

The contract was awarded on 7-24-69, work started 7-28-69 and was completed on 10-2-70 at a final cost of $313,575.98 representing an 11% underrun. The contract time of 100 calendar workdays was exceeded by 149 days. Time extensions were granted in the amount of 112 days with liquidated damages being assessed for the remaining time at a rate of $100/day.

NOTED
A. E. JOHNSON

NOTED
TOM EDWARDS

NOTED
TOM EDWARDS

ACCEPTANCE OF PROJECT IS RECOMMENDED		ACCEPTED BY BUREAU OF PUBLIC ROADS	
SIGNATURE: Alford T. Christianson		SIGNATURE: R. E. Simpson	
TITLE: C. T. Christianson, Area Engineer	DATE: 11-4-71	TITLE: Division Engineer	DATE:

PREVIOUS EDITIONS MAY BE USED UNTIL SUPPLY IS EXHAUSTED

D. Const
11-17-71

Project documents relative to materials testing, EEO reporting, labor compliance interviews and pay quantity measurements were reviewed in the Multnomah County Construction Engineer's office. These records indicate satisfactory compliance with contract provisions and adequate project engineering control including action taken on deviations from specifications.

The materials certification indicates nonparticipation and penalty assessments on four items where the contractor failed to comply with contract specification requirements. The completed project is considered satisfactory and will adequately serve the purpose for which it was intended. The county construction department can view their accomplishments on this section with pride.

There were two primary reasons for the overrun in contract time. The first seasons grading work was delayed by failure of utilities to make timely adjustments and relocations. The second seasons operations were hampered by subcontractor coordination problems including bankrupcy of one sub. The administration of contract time, including extensions, is considered satisfactory.

RECEIVED
NOV 17 1971
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
OCT 7 - 1971
FOR FILING

SU-559(2)
7284

October 6, 1971

Rathbone, King & Sealey
310 S. W. 4th Street
Portland, Oregon 97204

Gentlemen:

On June 4, 1971, we wrote to you concerning release of final payment on Contract No. 7284 awarded to Cascade Construction Company, Inc., for work on the N. Delaware Avenue-N. Wesley Avenue (Portland) Section of North Columbia Boulevard (FAS 940) in Multnomah County.

Final payment on this contract is $11,733.17 and the total contract amount is $313,375.98, including $1,994.43 for work performed under force account.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

dr

cc Cascade Construction Company, Inc.
P. O. Box 4267
Portland, Oregon 97208

Hugh Lacey Insurance Agency
Woodlark Building
Portland, Oregon

bc Frank Morgan
Ivan Merchant
R. L. Schroeder
V. E. Shoog
Attn: John Marr

RECEIVED
JUN 4 - 1971
FOR FILING

SU-559 (2)
7284

June 3, 1971

Oregon State Highway Commission

Gentlemen:

Work was completed October 3, 1970 on Contract No. 7284. The contract was with Cascade Construction Company and was for grading and paving on the N. Delaware Avenue-North Wesleey Avenue Section of North Columbia Boulevard (FAS 940) in Multnomah County.

As the contractor has completed all work according to specifications, I recommend that you accept the project effective June 3, 1971 and that you concur in this procedure at the Commission meeting on June 22, 1971.

It is assumed that if you have no objections to this action and you do not advise me to the contrary, I may consider the matter has your approval.

Very truly yours,

R. L. Porter
State Highway Engineer

cc: Floyd Query
Tom Edwards
A. E. Johnson
V. D. Wolfe
F. D. Morgan
I. D. Merchant
V. E. Skoog
L. H. Young
L. W. Rulien

VG:fw

PROFILE
FOR FILING

OREGON STATE HIGHWAY DIVISION

SU-2501(2)
7284

HIGHWAY BUILDING • • • SALEM, OREGON • • • 97310

June 3, 1971

Mr. Robert L. Nordlander
Director of Public Works
Multnomah County
9659 N.E. Hancock Drive
Portland, Oregon 97220

RE: N. Delaware Ave.-N. Woolsey Ave. Section
North Columbia Boulevard (FAS 940)
Contract No. 7284

Dear Sir:

NOTED
A. E. JOHNSON

Based on the recommendations contained in the letter of December 3, 1970 to Mr. L. W. Rullen, Regional Engineer, by Mr. Tor Lyshaug, Construction Engineer, payment to Cascade Construction Company for the total amounts indicated on the final estimate has been made with the following exceptions:

Bid Item No. 11 - Asphalt in Bituminous Base Mixture - Total quantity for this item has been reduced from 803.969 tons to 777.521 tons. This reduction was made due to lack of data to substantiate the 372.752 tons shown as being incorporated into the mixture at the contractor's Rivergate plant. At the bid price of $30.00 per ton, this 26.448 tons reduction will amount to a reduction of $793.44 in payment to the contractor unless you can furnish additional data to verify that this amount was in fact incorporated into the mixture.

Our review of the test results records indicates that 22 percent of the Bituminous Base Mixture furnished under Bid Item No. 10 and 71 percent of the Class "B" Asphalt Concrete furnished under Bid Item No. 15 did not comply with specification requirements. This is 1,687 tons of Bituminous Base Mixture and 4,456 tons of Class "B" Asphalt Concrete Mixture in excess of the maximum amount of non-specification material normally allowed to be accepted and still considered as being within reasonably close conformance with specification requirements. While in agreement with your opinion that the variations from the design mix are not enough to cause an appreciable loss in strength of these mixtures, the high void contents of the mixes furnished, as indicated by the compaction core results, can have a detrimental effect on the durability of the pavement and result in a reduced service life.

The possibility that the contractor's plant was furnishing several different mixes at the same time is not considered sufficient justification for acceptance of excessive amounts of non-specification materials. It is the contractor's responsibility to furnish the specified materials and commercial suppliers of A. C. mixtures are not considered an exception as they are in the business to supply "prescription" mixes.

State and Federal participation in these items is therefore being reduced by $144.90 for the excess non-specification material accepted for Bid Item No. 10 and $1,210.46 for that accepted for Bid Item No. 15, for a total of $1,355.36; this being the minimum amounts we would normally accept from a contractor as a reduction in price for acceptance of these amounts of non-specification material.

It is recommended that you review your present inspection procedures. The records for this and previous projects indicate your present inspection procedure for aggregates and bituminous mixtures consist of after the fact documentation of what was accepted rather than providing a positive means for on the job control to prevent excessive amounts of non-specification materials from being incorporated into the project. This is considered one of the primary purposes of having a sampling and testing program.

On future projects, when excessive amounts of non-specification materials are accepted by personnel under your supervision and which you consider to be acceptable for the use intended, a Price Agreement to document payment at a reduced price will be required as per Section 105.03 of our 1970 Standard Specifications for Highway Construction.

Your Testing Technician, Mr. L. E. Benjamin, has received instructions as to the guidelines to be followed to determine what amounts of non-specification materials are considered excessive and the computation of acceptable reductions in prices. It will be your responsibility to process the reduction in price with the contractor. If this procedure is not followed, State and Federal participation in the payments for these materials will be reduced accordingly.

Mr. L. W. Rulien, Regional Engineer, is being requested by a copy of this letter to meet with you to discuss the actions contained herein and related problems encountered on other projects constructed under your supervision.

Very truly yours,

F. D. Morgan
Construction Engineer

By M. D. Glenn

M. D. Glenn
Quality Control Engineer

RECEIVED
JUN 7 1971
OFFICE OF
STATE HIGHWAY ENGINEER

MDG:fw

bc: A. E. Johnson
L. W. Rulien
John Jenkins

RECEIVED
FEB 12 1971
FOR FILING

511-557(2)
7284

#7

January 12, 1971

Cascade Construction Company, Inc.
West of S. W. Abernathy Street
Portland, Oregon 97201

Gentlemen:

The State Highway Commission at its meeting on January 7 considered your request for an extension of 99 days to complete Contract No. 7284 for work on the N. Delaware Avenue-N. Woolsey Avenue (Portland) Section of FAS 940 in Multnomah County.

Careful consideration was given to the reasons you submitted. However, in light of the available facts and the provisions of the contract, the Commission granted you an extension of 42 days, without assessment of liquidated damages.

If there are pertinent facts which have not yet been considered, you should contact the Resident Engineer, the Regional Engineer or the Construction Engineer in the Salem Office.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

fbm
cc F. D. Morgan
V. E. Skoog
L. W. Hulse
Multnomah County Engineer

FORM E-30 (REV. 10-69)

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

December 22, 1970

SUBJECT: N. Delaware Ave.-N. Woolsey Ave.
Contract No. 7284
Request for Time Extension

To:

Mr. A. E. Johnson
Assistant State Highway Engineer
BUILDING

The Multnomah County Director of Public Works has forwarded a second request for contract time extension from Cascade Construction Company. This contractor requests an additional 99-day extension because of additional utility delay and a late Price Agreement which added significant work at a late stage of the project. An earlier request for time extension on this project was presented to the Highway Commission at their July 7 meeting at which time a 50-day extension was granted (this 50 days is just what the contractor requested). Including the 50 day extension (which made a total of 150 days), the contract time expired July 25, 1970 but the project was not actually completed until October 2, 1970, so 99 days liquidated damages have accrued at the rate of $100 per day for a total of $9,900.

Price Agreement No.7 in the amount of $13,455 is dated August 10, 1970 and covers the construction of a new connection from North Argyle Street to North Columbia Boulevard right at the easterly end of the subject project. This was at the County's request (the County performs the engineering on this contract) and this new connection was considered a benefit in routing traffic during reconstruction of the next unit from North Delaware Avenue to North Borthwick Avenue.

All the regular contract work was completed by August 13 and the 50 days which accrued thereafter are all related to the late Price Agreement and 50 days extension is justified for that reason. The County's Resident Engineer recommends 10 days additional extension because of interference in July, 1970 by a power pole in the way of the required construction of a large manhole. The County further recommends an additional 2 days because of extra work added at another large manhole.

The above three recommendations make a total of 62 days additional recommended by the County and concurred in by our Regional office. Copies of their reports are attached.

GPO 82478-734

In reviewing this matter, we believe the recommended extension is justified and has been fairly derived. This would leave 37 days liquidated damages in effect amounting to $3,700. This was a Federal-aid Secondary project and does not require specific approval of the Federal Highway Administration.

A rough draft letter to the Highway Commission is att ached.

F. D. Morgan
Construction Engineer

By John A. Bond

John A. Bond
Construction Administration Engineer

J AB:fw

Enc.

cc V. L. Gallagher

FORM E-20 (REV. 10-68)

Routing

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

RECEIVED
NOV 18 1970
CONSTRUCTION
DIVISION

Portland, Oregon
November 17, 1970

SUBJECT: N. Delaware Ave. to N. Woolsey Ave.
N. Columbia Avenue
Contract No. 7284

To: F. D. Morgan
Construction Engineer
Salem

Enclosed is a request from the contractor on the subject project for additional time in which to complete work without assessment of liquidated damages.

The contract was awarded July 24, 1969 and allowed 100 calendar working days for completion. Utility relocation interfered with the contract and a 50 day time extension was granted.

The contractor is now requesting an additional 39 days as a result of utility interference during the period of July 13, 1970 through July 23, 1970, plus 60 days to cover the period he was engaged soley in extra work.

The county recommends twelve (12) days for the period of July 13 through July 24, 1970, as a result of the utility companies interference and extra work in construction of a manhole at Wilbur Street. They further recommend that 50 days be allowed for the period from August 15 through October 2, 1970 during which time the contractor was engaged in construction of revised connection at N. Argyle Street. This work was added to the contract after the contractors work was essentially complete.

I concur with Construction Engineer Lyshaug's recommendations that an additional 62 days be allowed for completion of the contract without assessment of liquidated damages.

L. W. Rulien
Regional Engineer

by Allan C Harwood

A. C. Harwood
Regional Construction Engineer

ACH:bd
enc
CC: R. L. Nordlander

SP 82478-734

COUNTY COMMISSIONERS
M. JAMES GLEASON, Chairman
L. W. AYLSWORTH
DAVID ECCLES
DONALD E. CLARK
MEL GORDON

Multnomah County Oregon

R. L. NORDLANDER, DIRECTOR, DEPARTMENT OF PUBLIC WORKS
MAIN OFFICE (503) 233-5861 ■ 2115 S. E. MORRISON STREET ■ PORTLAND, OREGON 97214

November 6, 1970

☐	☐	☐	☐
DE	ADE	ADE	OE

NOV 9 1970

☐	☐	☐
TE	UE	DES

Mr. L. W. Rulien
Division Engineer
Oregon State Highway Dept.
PO Box 02157 (Milwaukie)
Portland, Oregon 97202

RE: N. Columbia Blvd. - Contract #7284

Dear Sir:

Enclosed are five copies of a request for additional time from Cascade Construction Company, the prime contractor on the above contract.

This project was completed except for extra work on August 13, 1970. Calendar days were counted until October 2, 1970 which makes a total of 50 calendar days counted after the original contract was completed.

12

On July 13, 1970, the contractor was forced to stop work on the storm sewer, due to a power pole in the way of constructing the step manhole. This pole was not removed until July 23, 1970. Although the contractor was working on other phases of the construction during this time, we feel that it did prolong the time of completion by 10 days.

On July 23, 1970 and July 24, 1970, the contractor was working on Extra Work Order No. 2, constructing a manhole on N. Wilbur Street intersection. This Extra Work interferred with the paving somewhat because of moving the cast iron pressure line that was partially within the Columbia Blvd. construction area. Possibly this would entitle the contractor to two more days extension.

We are enclosing 6 copies of the inspector's daily report and 3 pages from the resident engineers diary as supporting evidence for our recommendation that 62 additional calendar days be granted. This would make a total of 212 calendar days without liquidated damages and 37 days on penalty time.

Very truly yours,

ROBERT L. NORDLANDER, Director of Public Works

By For Tor Lyshaug
Tor Lyshaug, Construction Engineer

CBC:ct

RECEIVED
DEC 28 1970
FOR FILING
SU-55962)
1774

December 23, 1970

Oregon State Highway Commission

Request for Extension of Time
No. 7
January 5, 1971 meeting

Gentlemen:

Cascade Construction Company, contractor on the North Delaware Avenue-North Woolsey Avenue Section of North Columbia Boulevard (FAS 940) in Multnomah County, has made a second request for extension of the contract time. This is Contract No. 7284 and at your July 7, 1970 meeting, you approved a 30-day extension based on a delay in award of the contract and delays from utility relocations early in the project. Engineering on this project is performed by the Multnomah County Department of Public Works, which has reviewed the latest request for extension, based on additional utility delay late in the project and the addition by Price Agreement of a significant amount of late work for which a total of 99 days additional is requested by the contractor. The project was actually completed October 2, 1970, with 99 days' liquidated damages accrued.

The late added work covered the construction of a new connection to North Argyle Street and the last 30 days of the contract time counted were devoted to this added work, so extension for this time is justified. An additional 10-day extension is justified because of power pole interference with construction of a large manhole in July and an additional two days because of modification work added at another manhole in July.

The three items previously mentioned amount to 62 days, which have been recommended for extension by Multnomah County Department of Public Works. We have reviewed the County's analysis and concur in recommending a 62-day extension. This will leave 37 days' liquidated damages in effect at the rate of $100 per day. This is a Federal-aid Secondary project and does not require approval of the Federal Highway Administration.

This matter will be on the agenda for your consideration at the January 5 meeting.

Very truly yours,

R. L. Porter
State Highway Engineer

cc: Floyd Query
Tom Edwards
A. E. Johnson
Victor D. Wolfe
F. D. Morgan
V. E. Skoog
L. H. Young
L. W. Rulien

JAB:fw sr

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7284 Contractor Cascade Construction Company, Inc.

Highway N. Columbia Blvd, N. Delaware Ave. to N. Woolsey Ave.

Section N. Delaware Ave. to N. Woolsey Ave.

Kind of Work Grading & Paving

It is recommended that the request for increase in the number of workdays within which to complete said contract be **DENIED** or **GRANTED**. The reasons for such recommendation are as follows:

Recommend 62 days additional for Price Agreement 7 Argyle Street connection added, and utility pole interference with manhole work in July, 1970 and Extra Work Order No. 2, added manhole work.

Recommended for Approval:

Allen C. Warnock
Division Engineer

John L. Bowe
Construction Engineer or Bridge Engineer

R. J. Johnson
Assistant State Highway Engineer

Contract No.	7284
Project designation	FAS 940 (State) SU-559(2) (Federal)
Date awarded	7/24/69
Work started	7/28/69
Per cent completed	100% 10/2/70 (Date)
No. of ~~Workdays~~ Calendar Days Allowed	150*
*Includes 50 days previously granted	
No. of ~~Workdays~~ Calendar Days Used	262
No. of Added ~~Workdays~~ Calendar Days Requested	99

ST-0200-734

E-320 (Rev.)—5M—9-66

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon 97310

Date October 30, 19 70

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 50 days to 249 days, within which to complete our Contract No. 7254, without the assessment of liquidated damages. The said contract is described as follows:

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

Under the original contract due to the delay and interference caused by the failure of the utilities companies to remove utilities, we find it necessary to request an extension of 39 days.

Further we find it necessary to request another 60 days caused by extra work order number 2 and Contratt Items 1 - 13 respectively for the connection to N. Argyle Street.

Respectfully submitted,

Cascade Construction Company, Inc.
Contractor

By M. A. Conway, Jr. President

CONSENT OF SURETY

Date October 30, 19 70

We, Peerless Insurance Company

....., as

surety on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

Harold F. [illegible]

(SEAL)

Resident Agent

SU-559(2)
7284

FORM E-1 (REV. 12-66)

OREGON STATE HIGHWAY DEPARTMENT

FIELD ENGINEER'S WEEKLY REPORT

FOR CONSTRUCTION PROJECTS ONLY
CONSTRUCTION AND BRIDGE DIVISIONS

SECTION: N. Delaware Ave. to N. Woolsey Ave.		WEEK ENDING: October 3, 1970
		SECTION PREFIX: 526-1016
HIGHWAY: N.Columbia Blvd.FAS940		COUNTY: Multnomah
NAME OF JOB: North Columbia Blvd.	KIND OF WORK: Grading & Paving	
CONTRACTOR: Cascade Construction Co.	CONTRACT NUMBER: 7284	FEDERAL AID PROJECT NUMBER: SU-559 (2)
DATE OF CONTRACT: July 24, 1969	DATE WORK STARTED: July 28, 1969	ESTIMATED COMPLETION DATE: October 1, 1970
AVERAGE FORCE ON PROJECT FOR THE WEEK: MEN: 6 SUPERVISION: 1	SPECIFIED WORK DAYS / SPECIFIED CALENDAR DAYS: 100 + 50	WORK DAYS USED / CALENDAR DAYS USED: 249
PROJECT AUTHORIZATION: $383,505.17	SPECIFIED COMPLETION DATE	PERCENT OF TIME ELAPSED: 166%
EXCLUSIVE OF ENGINEERING: $	ENGINEERING AUTHORIZATION: $	PERCENT OF CONTRACT COMPLETED BASED ON ESTIMATED COST: 100%
ESTIMATED COST OF COMPLETED PROJECT, EXCLUSIVE OF ENGINEERING: $328,389.66	ENGINEERING COST TO DATE: $	PERCENT OF CONTRACT COMPLETED BASED ON TOTAL AUTHORIZATION: 85%
ESTIMATED PERCENT: OVERRUN / UNDERRUN . . . . . 14 %	PERCENT OF AUTHORIZATION . . . . . %	DATE PROJECT WAS COMPLETED: October 2, 1970

ESTIMATED PERCENT COMPLETE (ROADWORK)

CLEARING	DRAINAGE	GRADING	BASE	OIL AND/OR PAVE.	MAT'L. PROD.		
100%	100%	100%	100%	100%			

	GRADING	SURFACING	MAINTENANCE MATERIALS	OIL & BITUMINOUS MACADAM	PAVING
MILES IN PROJECT	0.98	0.98		0.98	0.98
MILES PARTIALLY COMPLETED	0	0		0	0
MILES COMPLETED	0.98	0.98		0.98	0.98
TOTAL ESTIMATED QUANTITIES (CONTRACT)	35,800c.y.	23,000 T		20,370 T	9,450 T
TOTAL QUANTITIES CORRECTED TO DATE	35,053c.y.	22,273 T		15,626 T	8,304 T
ESTIMATED QUANTITIES MOVED OR PLACED TO DATE	35,053c.y.	22,273 T		15,626 T	8,304 T
AVERAGE DAILY QUANTITIES	0	50 T		33 T	29 T
AVERAGE DAILY QUANTITIES NECESSARY TO COMPLETE PROJECT ON TIME					
NUMBER OF SHIFTS PER DAY	0	1		1	1
HOURS PER SHIFT	0	8		8	8

EQUIPMENT USED DURING THE WEEK:

1 paving machine, 1 roller, 3 trucks

ESTIMATED PERCENT COMPLETE (STRUCTURES)

BRIDGE NO.								
PERCENT								

	WEATHER	WORK DAYS CHARGED	HOURS DELAY	CAUSE OF DELAY
SUNDAY 27		1	0	
MONDAY 28		1	0	
TUESDAY 29		1	0	
WEDNESDAY 30		1	0	
THURSDAY 1		1	0	
FRIDAY 2		1	0	Completed
SATURDAY 3				

Routing
Morgan — Pease
Ducker — Swan
Lyond — Glenn
Walker — Litchfield
Bochme — Gallagher
Johnson — Stein

RECEIVED
OCT 6 1970
CONSTRUCTION DIVISION

BEN GIFFORD

GENERAL DESCRIPTION OF ACTIVITIES FOR THE WEEK	
SUNDAY	No work.
MONDAY	Placed base rock.
TUESDAY	Paved with PMBB.
WEDNESDAY	Adjusted manholes.
THURSDAY	Paved bottom course of "B" Mix.
FRIDAY	Paved top course of "B" Mix.
SATURDAY	

REMARKS

Completed Price Agreement #7, October 2, 1970.

Project now complete.

SIGNED A B Cummings LOCATION _____

PRIME RESIDENT SUBMIT 2 COPIES. WHEN BRIDGES AND GRADING BOTH ARE INVOLVED, SUBMIT 3 COPIES.

SP°F216

4545.

Files

FILED
AUG 31 1970
CLAY MYERS
SECRETARY OF STATE

SEP 1 1970

FOR FILING

511-559(2)

7174

OREGON STATE HIGHWAY DIVISION

HIGHWAY BUILDING • SALEM, OREGON • 97310

August 28, 1970

Pacific Building Materials
3510 S. W. Bond Avenue
Portland, Oregon 97201

Attention: Ike Menashe
District Credit Manager

Gentlemen:

This will acknowledge receipt of your letter of August 25 and attached Notice of Claim stating that Cascade Construction Company, Inc., owes you for concrete, sand and gravel in the amount of $260.12.

This appears to be in reference to the Cascade Construction Company, Inc., Contract No. 7284 for grading and paving N. Delaware Avenue-N. Woolsey Avenue (Portland) Section of North Columbia Boulevard (FAS 940) in Multnomah County.

The Peerless Insurance Company through Hugh Lacey Insurance Agency, Woodlark Building, Portland, furnished the performance bond on this contract. We will advise them of the receipt of your claim and we will also forward it to the Secretary of State for filing.

Please let us know when your claim has been paid.

NOTED ON CARD
9-1-70 cR

Very truly yours,
ORIGINAL SIGNED
FLOYD QUERY

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

NOTED
C. W. HEAD

cc Peerless Insurance Co.
Hugh Lacey Ins. Agency
Cascade Constr. Co., Inc.

Hon. Clay Myers - Please acknowledge receipt of the attached claim on the enclosed copy of this letter.

Pacific building materials
Division of Glacier Sand & Gravel
3510 S. W. BOND AVENUE PORTLAND, OREGON 97201 226-3221

August 25, 1970

The Honorable Floyd Query
Secretary & Ex Officio Clerk & Auditor
State Highway Department
State Highway Building
Salem, Oregon 97310

Gentlemen:

Enclosed is a Notice of Claim in the sum of $260.12 against the bond taken from Cascade Construction Company, Inc., principal, and Peerless Insurance Company, surety, for the work of the North Columbia Boulevard, Federal Aid Secondary No. 940, State Highway Contract No. 7284.

A copy of this notice of claim has been filed with the Honorable Clay Myers, Secretary of State.

Yours very truly,

PACIFIC BUILDING MATERIALS
Division of Glacier Sand & Gravel

Ike Menashe

Ike Menashe
District Credit Manager

enclosure

IM:amc

NOTED
FLOYD QUERY

RECEIVED
AUG 26 1970
STATE HIGHWAY COMMISSION

NOTED

August 25, 1970

To Oregon State Highway Department:

Notice is hereby given that the undersigned Glacier Sand & Gravel Co. dba Pacific Building Materials has a claim for concrete, sand, and gravel furnished by Glacier Sand & Gravel Co. dba Pacific Building Materials in the sum of $260.12 against the bond taken from Cascade Construction Company, Inc., principal, and Peerless Insurance Company, surety, for the work of the North Columbia Boulevard, Federal Aid Secondary No. 940, State Highway Contract No. 7284.

GLACIER SAND & GRAVEL CO. dba
PACIFIC BUILDING MATERIALS

By Ike Menashe

RECEIVED
AUG 6 - 1970
FOR FILING

SU-559(2)
7284

July 14, 1970

Cascade Construction Co., Inc.
Foot of S. W. Abernathy Street
Portland, Oregon 97201

Gentlemen:

The State Highway Commission at its meeting on July 7, 1970, granted your request for an extension of 50 days, without assessment of liquidated damages, on Contract No. 7284 for grading and paving on N. Delaware Avenue and N. Woolsey Avenue (FAS 940) in Portland, Multnomah County.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

sss

cc F. D. Morgan
V. E. Skoog
L. W. Rullen
Multnomah County Engineer

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7284 Contractor Cascade Construction Company

Highway County Road FAS 940

Section N. Delaware Ave.-N. Woolsey Ave.

Kind of Work Grading and Paving

It is recommended that the request for increase in the number of workdays within which to complete said contract be **DENIED** or **GRANTED**. The reasons for such recommendation are as follows:

Recommend 50-day extension for delay from utility relocations and delay in award of the contract.

Recommended for Approval:

Division Engineer

for Construction Engineer or Bridge Engineer

Assistant State Highway Engineer

Contract No.	7284
Project designation	FAS 940 (State-Federal)
Date awarded	July 24, 1969
Work started	July 28, 1969
Per cent completed	25% 5/30/70 (Date)
No. of Workdays Allowed	180
No. of Workdays Used	124
No. of Added Workdays Requested	50

(5) Copies

B—320 (Rev.)—836—10-67

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract.

RECEIVED FACTOR

Oregon State Highway Commission
Salem, Oregon

Date May 4, 19 70

Gentlemen:

We, the undersigned, respectfully request an increase in the number of ~~workdays~~ Calendar work days from 100 days to 150 days, within which to complete our Contract No. 7284, without the assessment of liquidated damages. The said contract is described as follows: Grading & paving N. Delaware – N. Woolsey Sec., FAS 940 Multnomah County

The dates of the calendar workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

Respectfully submitted,

CASCADE CONSTRUCTION CO., INC.
Contractor

By [signature]

CONSENT OF SURETY

Date May 6, 19 70

We, Peerless Insurance Company

Keene, New Hampshire, **as**

surety on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

[signature]
Hugh V. La[illegible]

(SEAL)

[signature]
Hugh V. La[illegible]

Cascade
Construction
Company

General Contractors • Modern Pavements
Office & Plant: Foot of S.W. Abernethy St., Portland, Ore. 97201
7881 N.W. St. Helens Road PHONE • 228-7554

May 4, 1970

Multnomah County Road Department
2115 S. E. Morrison Street
Portland, Oregon

Mr. Tor Lyshaug

Re: Contract 7284 - FAS Project 940,
Multnomah County

Dear Tor,

We are referring to our letters of August 22, and November 3, 1969, which point out the delays encountered in the construction of the above projects. As we projected in our letters, there now remains an insufficient amount of time available to complete the project.

Since the April 2 Spring start-up, we have resumed the work whenever the weather and ground conditions allowed us. However, at this time, it now appears that we will require an additional fifty calendar days to complete the project, weather, ground and labor conditions allowing.

Please consider this a request for an extension of fifty days' time on the project. Thank you for your consideration.

Yours very truly,

CASCADE CONSTRUCTION COMPANY, INC.

M. A. Conway, Jr.
President

MACjr/mg

RECEIVED
JUL 9 - 1970
FOR FILING

511-559(2)
7284

July 8, 1970

Buss, Leichner, Lindstedt & Barker
Attorneys at Law
1508 Standard Plaza
Portland, Oregon 97204

Attention: Norman L. Lindstedt

Gentlemen:

As requested in your letters of July 7, we are attaching certified copies of the Contract and Bond pages for Contract No. 7214 on the West Fremont Interchange Section and for Contract No. 7284 on the North Delaware Avenue-North Woolsey Avenue (Portland) Section. There is no charge for these copies.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

ses
Attachment

BUSS, LEICHNER, LINDSTEDT & BARKER
ATTORNEYS AT LAW
1506 STANDARD PLAZA
PORTLAND, OREGON 97204

DONALD A. BUSS
CURTIS W. LEICHNER
NORMAN L. LINDSTEDT
RALPH C. BARKER
DAVID J. BUONO

TELEPHONE 226-6366
AREA CODE 503

July 7, 1970

Oregon State Highway Division
Highway Building
Salem, Oregon 97310

Gentlemen:

We are the attorneys for Town Concrete Pipe, Inc. Our client has heretofore filed with you on May 22, 1970, its notice of claim that Town Concrete Pipe, Inc. has a claim in the sum of $2,415.04 for materials furnished to William Deppenmeier for the Oregon State Highway Department Project, N. Delaware Avenue - N. Woolsey Avenue Section, Contract #7284.

This notice was supplemented by formal notice given again on May 29, 1970, through this office. As of this date, our client remains unpaid.

We would respectfully request that pursuant to the affidavit enclosed, we be provided with a certified copy of the contract and bond on the job in question. We enclose herewith a carbon copy of the letter written this date to Peerless Insurance Company.

Very truly yours,

Norman L. Lindstedt

NLL:jg
Encs.

RECEIVED
JUL 8 - 1970
OREGON
STATE HIGHWAY COMMISSION

BUSS, LEICHNER, LINDSTEDT & BARKER
ATTORNEYS AT LAW
1508 STANDARD PLAZA
PORTLAND, OREGON 97204

TELEPHONE 226-6368
AREA CODE 503

RONALD A. BUSS
CURTIS W. LEICHNER
NORMAN L. LINDSTEDT
RALPH C. BARKER
DAVID J. BUONO

July 7, 1970

Peerless Insurance Company
Board of Trade Building
Portland, Oregon 97204

Gentlemen:

We are the attorneys for Town Concrete Pipe, Inc. Our client has heretofore filed its claim with the Cascade Construction Company and with the Oregon State Highway Department for the sum of $2,415.04 for materials furnished to William Deppenmeier for the Oregon State Highway Department project, N. Delaware Avenue - N. Woolsey Avenue section, Contract #7284.

Demand is hereby made for the payment of said sum. If it is not received within ten days, legal action will be commenced, in which case we will request that the Court allow attorneys' fees, interest, and statutory costs, all pursuant to Oregon law.

We expect that there will be remitted to this office the sum of $2,415.04 forthwith.

Very truly yours,

Norman L. Lindstedt

NLL:jg

cc: Oregon State Highway Dept.
Rathbone, King & Seeley
Cascade Construction Company

RECEIVED
JUL 8 - 1970
OREGON
STATE HIGHWAY COMMISSION

AFFIDAVIT

STATE OF OREGON)
) ss.
County of Multnomah)

I, Norman L. Lindstedt, being first duly sworn on oath, depose and say:

(1) That I am the attorney for Town Concrete Pipe, Inc.

(2) That Town Concrete Pipe, Inc., an Oregon corporation, has a claim for labor or materials and has supplied labor or materials for the prosecution of the work known as Contract No. 7284, Oregon State Highway Division, for grading and paving on the N. Delaware Avenue--N. Woolsey Avenue section of N. Columbia Boulevard, in Multnomah County, Oregon; that my client has heretofore filed its notice of claim pursuant to Oregon law.

(3) That I make this affidavit in accordance with ORS 279.512 and ORS 279.515, and hereby request a certified copy of the contract and bond involved.

/s/ Norman L. Lindstedt

Subscribed and sworn to before me this 7th day of July, 1970.

Joyce E. Gibb
Notary Public for Oregon
My Commission expires 2/4/74

RECEIVED
JUL 8 - 1970
OREGON
STATE HIGHWAY COMMISSION

RECEIVED
JUN 24 1970
FOR FILING

SU-559(2)
7284

June 23, 1970

Oregon State Highway Commission

Request for Extension of Time
No. 4
July 7, 1970 meeting

Gentlemen:

Cascade Construction Company requests a 50-day extension of the contract time on the North Delaware-North Wesley Avenue Section of FAS 940 in Multnomah County, Contract No. 7284. This project is still under way and is on liquidated damages because the 100 calendar work-days allowed elapsed on May 6. The contractor cites delay from utility relocations, including both power poles and City water lines.

Engineering on this project is performed by the Multnomah County Department of Public Works which has reviewed the request and confirms that utility work did delay the contractor 39 days. In addition to this, we find there was an eight-day delay in submitting the contract to the contractor for signature in excess of the specification allowance. This delay occurred pending receipt of the County's deposit to cover its estimated share of the funding.

The above two reasons, which total 47 days, delayed the project into poor fall weather so that, in effect, the days then available were not as productive as the days that had been lost. This factor more than justifies an additional three days, or a total of 50 days, as the contractor has requested.

I recommend that a 50-day extension be granted. This extension will expire June 25. The present outlook is that the project will not be completed until early July.

so several days liquidated damages will still accrue at the rate of $100 per day. This is a Federal-aid Secondary project and does not require approval of the Bureau of Public Roads.

This matter will be on the agenda for your consideration at the July 7 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

JAB:fw mc

cc Floyd Query
R. L. Porter
F. B. Klaboe
Victor D. Wolfe
F. D. Morgan
V. E. Skoog
L. W. Rullen

FORM E-20 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

June 16, 1970

SUBJECT: North Delaware Ave.-North Woolsey Ave. Section
Contract No. 7284

To:

Mr. F. B. Klaboe
Assistant State Highway Engineer
BUILDING

Cascade Construction Company has requested a 50-day extension of the contract time due to utility relocation interferences early in the project. This is a Multnomah County federal-aid project and Multnomah County handles the engineering. One hundred (100) calendar workdays were allowed (and the County finds fault with this as they want the time on their jobs in workdays). As of last week, 38 days liquidated damages had accrued and the job was only 33 percent done. However, it is down to the point where paving is starting and completion is estimated for July 15.

The County Construction Engineer concurs that utilities delayed the project from the time the workday count started on August 5, 1969 until September 16. This would amount to 39 days. By then, rainy weather was hindering progress, so we have the usual influence of bad days for good.

We also find that there was an 8-day delay in submitting the contract. Bids were opened June 26, 1969. The contract was not awarded and mailed until July 24, an elapse of 28 days. This delay was for receipt of the County deposit.

This 8 days, in addition to the 39-day utility delay, makes 47. The influence of poorer September weather for the days lost earlier in the season more than justifies the remaining 3 days which the contractor has requested. We therefore recommend a 50-day extension as requested. A rough draft to the Highway Commission is attached.

F. D. Morgan
Construction Engineer

By

John A. Bond
Construction Administration Engineer

RECEIVED
JUN 17 1970
OFFICE OF
STATE HIGHWAY ENGINEER

JAB:fw
Attach.
cc V. L. Gallagher

RECEIVED
JUN 17 1970
SECRETARY OF STATE
FOR FILING

4527
SECRETARY OF STATE
CLAY MYERS
JUN - 8 1970
FILED

OREGON STATE HIGHWAY DIVISION

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

SU-559(2)
7284

June 5, 1970

Buss, Leichner, Lindstedt & Barker
Attorneys at Law
1508 Standard Plaza
Portland, Oregon 97204

Attention: Norman L. Lindstedt

Gentlemen:

This is to acknowledge receipt of your letter of May 29 on behalf of Town Concrete Pipe, Inc., which states that they furnished materials to Cascade Construction Company and Willie Deppenmeier in the amount of $2,415.04. This appears to be in reference to the Cascade Construction Company, Inc., Contract No. 7284 for grading and paving on the N. Delaware Ave.-N. Woolsey Ave. (Portland) section of North Columbia Blvd. (FAS 940) in Multnomah County.

The Peerless Insurance Company through Hugh Lacey Insurance Agency, Woodlark Building, Portland, furnished the performance bond on this contract. We will advise them of the receipt of your claim letter and we will also forward it to the Secretary of State for filing.

Please let us know when your client's claim has been paid.

NOTED ON CARD
June 16, 1970 ccc

As of this date, this office has received no prior claims from Town Concrete Pipe, Inc., against this contract.

RECEIVED
JUN 9 - 1970
OREGON
STATE HIGHWAY COMMISSION

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

By ORIGINAL SIGNED
C. W. HEAD
C. W. Head, Assistant Secretary

NOTED
C. W. HEAD

CWH:sj

cc The Aetna Casualty & Surety Co.
Updegraff Insurance, Inc.
Cascade Constr. Co., Inc.

bc Commission
Secretary of State Please acknowledge receipt of this claim on the enclosed copy of this letter.

BUSS, LEICHNER, LINDSTEDT & BARKER
ATTORNEYS AT LAW
1508 STANDARD PLAZA
PORTLAND, OREGON 97204

DONALD A. BUSS
CURTIS W. LEICHNER
NORMAN L. LINDSTEDT
RALPH C. BARKER
DAVID J. BUONO

TELEPHONE 226-6368
AREA CODE 503

May 29, 1970

Oregon State Highway Department
Salem, Oregon 97310

ATTENTION: Clerk or Auditor

Gentlemen:

We are the attorneys for Town Concrete Pipe, Inc. Our client has heretofore filed its claim with you for materials furnished to Cascade Construction Company and Willie Deppenmeier, said materials consisted of concrete pipe and accessories, said materials having been provided for the prosecution of the work involved in the Oregon State Highway Department's project, N. Delaware Avenue - N. Woolsey Avenue Section, Contract #7284. We would be most appreciative if you would acknowledge receipt of the notice of claim in question and acknowledge receipt of this letter. We are particularly desirous of obtaining the name of the bonding company involved with the job in question. We feel it appropriate to give them notice at this time. Thank you for your earliest attention to this matter.

Very truly yours,

Norman L. Lindstedt

NLL:js

P. S. The amount of the claim was $2,415.04.

N. L. L.

NOTED
FLOYD QUERY

RECEIVED
OCT 2 - 1969
FOR FILING

file

SU-559(2)

7284

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
September 29, 1969

copy

SUBJECT: EEO Filing Government
Report EEO-1

To: Mr. F. B. Klaboe
Assistant State Highway Engineer
BUILDING

An EEO compliance review of Cascade Construction Company was held on this September 18, 1969. Cascade had certified to filing all required Government EEO reports (attached is their Certification in their proposal on Contract No. 7284), but they had not filed any previous EEO-1 Report with the Federal Government. This appeared to be an oversight on the part of the contractor. However, we requested the contractor to promptly file two reports, one to represent the April 30, 1969 filing and one for the March 31, 1968 filing. He is to give us evidence by October 18 that acceptable reports have been filed with the Government. The contractor is therefor considered to be in CONDITIONAL COMPLIANCE on his current Federal-Aid projects. Cascade already has requested the proper forms from the Government by letter.

We now know this contractor has not filed all the required Government EEO reports. Such a defect clouds Cascade's current bidding status on future projects. Perhaps our Commission Secretary can and should withhold plans.

The following questions arise which we believe should be discussed with Administration: Is the lack of filing these forms a more serious contract violation than indicated by our action above? Should we take action stronger than conciliation in the future? May Cascade Construction Company receive bidding plans on future Federal-Aid projects?

For your information, I have attached an excerpt of instruction from the current Labor regulations in this regard.

9/30/69
Morgan:
Do not issue plans
until this is cleared up. Ed Johnsen
to bring this and clear it up
when compliance is met.
FBKlaboe

10-1-69

F. D. Morgan
Construction Engineer

ELJ:fr
Attachments
cc: Floyd Query
E. L. Johnsen

RECEIVED
SEP 30 1969
OFFICE OF
STATE HIGHWAY ENGINEER

cc Query

OREGON STATE HIGHWAY DEPARTMENT

SUPPLEMENT TO PROPOSAL - MAY, 1969

CERTIFICATION OF NONDISCRIMINATION IN EMPLOYMENT

As a supplement to this proposal, reference is made to the Supplemental Required Contract Provisions titled "Certification of Nondiscrimination in Employment", bound with the special provisions. Pursuant to these requirements, the bidder on this project shall complete and sign the following:

Bidders Certification of Nondiscrimination in Employment

The undersigned, as bidder on this project hereby certifies that he has X, has not ____, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, and that he has X, has not ____, filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Cascade Construction Company
(Company)

By: [signature]

President
(Title)

Date: June 25, 1969

Enclose in Proposal Form on
All Federal Aid Projects.

May, 1969

Copy from Cont no. 7284
FAP # SU-559(2)

LABOR REGULATIONS

EQUAL EMPLOYMENT OPPORTUNITY

(a) 60-1.7(a)(1): The Federal Highway Administration shall require each prime contractor and each prime contractor and subcontractor shall cause its subcontractors to file annually, on or before the 31st day of March, complete and accurate reports on Standard Form 100 (EEO-1) or such form as may hereafter be promulgated in its place. The report on Standard Form 100 (EEO-1) is required if the above-mentioned contractors and subcontractors (1) are not exempt from the provisions of the OFCC regulations in accordance with Section 60-1.5, (2) have 50 or more employees, (3) are prime contractors or first tier subcontractors, and (4) have a contract, subcontract or purchase order amounting to $50,000 or more. Any subcontractor below the first tier who performs construction work at the construction site and meets the requirements of subdivisions (1), (2) and (4) above, must also file the subject report.

(2) Each contractor and subcontractor required to file the Standard Form 100 (EEO-1) report, shall file such report with the State highway department for Federal-aid projects or for direct Federal projects, within 30 days of the award of a contract or subcontract unless such contractor or subcontractor has submitted such report within 12 months preceding the date of the contract award. Subsequent SF 100 reports shall be submitted on or before March 31 of each year thereafter, or at such intervals as the Federal Highway Administration or the Director of the Office of Federal Contract Compliance may require. The Federal Highway Administration with the Director of the OFCC's approval may extend the time for filing any report.

STATE COPY

m Approved; Budget Bureau No. 41-R2089.1

MONTHLY TRANSACTION NO.	FORM PR-2 (REV. 3-66) U.S. DEPARTMENT OF COMMERCE BUREAU OF PUBLIC ROADS	STATE
F-37		Oregon
PROJECT REPORT NO.	FEDERAL-AID PROJECT AGREEMENT (PPM 21-7)	COUNTY
3	5-13-69	Multnomah
		PROJECT NO. SU-559(2)

The State, through its Highway Department, having complied, or hereby agreeing to comply, with the terms and conditions set forth in (1) Title 23, U.S. Code, Highways, (2) the Regulations issued pursuant thereto by the Secretary of Commerce and, (3) the policies and procedures promulgated by the Federal Highway Administrator relative to the above designated project, and the Bureau of Public Roads having authorized certain work to proceed as evidenced by the date entered opposite the specific item of work, Federal funds are obligated for the project not to exceed the amount shown herein, the balance of the estimated total cost being an obligation of the State. Such obligation of Federal funds extends only to project costs incurred by the State after the Bureau of Public Roads authorization to proceed with the project involving such costs.

PROJECT TERMINI

N. Delaware Avenue - N. Woolsey Avenue Section

PROJECT CLASSIFICATION OR CLASS OF WORK	EFFECTIVE DATE OF AUTHORIZATION	APPROXIMATE LENGTH (Miles)
HIGHWAY PLANNING		
PRELIMINARY ENGINEERING		
RIGHTS-OF-WAY		
CONSTRUCTION	6-4-69	0.900
OTHER (Specify)		

FUNDS Pro Rata 63.54%

ESTIMATED TOTAL COST OF PROJECT	FEDERAL FUNDS
$ 401,476.00	$ 255,000.00

The State further stipulates that pursuant to said Title 23, Regulations, and policies and procedures, and as a condition to payment of the Federal funds obligated, it accepts and will comply with the applicable provisions set forth on the reverse hereof.

OREGON STATE HIGHWAY DIVISION
(Official name of Highway Department)

By _____

Assistant State Highway Engineer
(Title)

By _____

(Title)

By _____

(Title)

U.S. DEPARTMENT OF COMMERCE

BUREAU OF PUBLIC ROADS

_____
(Division Engineer)

R. E. Simpson

Date executed by Division Engineer August 13, 1969

Oregon State Highway Division

Federal-Aid
Project No. SU-559(2)

N. DELAWARE AVE.-N. WOOLSEY AVE. SECTION

OF FAS 940 IN MULTNOMAH COUNTY

Project Agreement Estimate.

Salem, Oregon, July 28, 1969

Type Code 6203
Grade and Pave (Sta. 352+50 to Sta. 400+00)(Contract No. 7284)

Temporary Protection and Direction of Traffic	All Required		$ 3,500.00
Clearing and Grubbing	All Required		8,500.00
General Excavation, Unclassified	35,800 cu.yd.	$ 0.80	28,640.00
Sand Fill	455 cu.yd.	3.00	1,365.00
Finishing Roadbed and Slopes	0.90 mile	2,778.00	2,500.20
Trench Excavation	3,340 cu.yd.	3.50	11,690.00
Watering	400 M-gal.	4.00	1,600.00
1½" - 0 Material in Base	23,000 ton	2.50	57,500.00
3/4" - 0 Material in Footpath	1,600 ton	4.90	7,840.00
Bituminous Base Mixture	19,400 ton	4.22	81,868.00
Asphalt in Bituminous Base Mixture	970 ton	30.00	29,100.00
3/4" - 0 Aggregate in Prime Coat	300 cu.yd.	5.75	1,725.00
RC-250 Asphalt in Prime Coat	46 ton	50.00	2,300.00
Asphalt in Tack Coat	7 ton	60.00	420.00
Class "B" Asphalt Concrete	9,400 ton	6.60	62,040.00
Class "C" Asphalt Concrete	50 ton	15.00	750.00
8-inch X-S Conc. Storm Sewer Pipe	1,340 lin.ft.	3.50	4,690.00
12-inch X-S or Cl. III Reinf. Conc. Storm Sewer Pipe	1,260 lin.ft.	4.00	5,040.00
15-inch X-S or Cl. III Reinf. Conc. Storm Sewer Pipe	1,400 lin.ft.	5.00	7,000.00
21-inch X-S or Cl. III Reinf. Conc. Storm Sewer Pipe	800 lin.ft.	7.00	5,600.00
Concrete Manholes	13 only	350.00	4,550.00
Step Manholes	1 only	2,500.00	2,500.00
Concrete Inlets, Type G-1	24 only	125.00	3,000.00
Concrete Inlets, Type CG-1	6 only	175.00	1,050.00
Setting Monument Boxes	5 only	50.00	250.00
Reconstructing Concrete Manholes	12 only	100.00	1,200.00
Concrete Curbs	300 cu.yd.	37.05	11,115.00
Concrete Driveways	70 sq.yd.	5.22	365.40
Concrete Walks	250 sq.yd.	4.32	1,080.00
			$348,778.60

Flagging (60% of Contractor's Costs)	All Required	$ 4,000.00
R.R. Protective Costs	All Required	3,000.00
3/4" - 0 Material in Approaches	All Required	200.00
Special Dust Oil	All Required	7,000.00
Class "A" Concrete	All Required	300.00
Crushed Rock and Granular Pipe Bedding Material	All Required	1,700.00
		$ 16,200.00
	Subtotal	$364,978.60
	10% Engr. & Cont.	36,497.40
	Total	$401,476.00

Length of Project - - - - - - - - 0.900 Mile
Cost of Roadway Per Mile- - - - $446,084.44

SUMMARY OF FUNDS

Federal Funds -	$255,000.00
State Funds -	73,238.00
County Funds- -	73,238.00
Total Cost	$401,476.00

State Funds for Const.: Chap. 175, Laws 1917; Chap. 31, Laws 1920; Chap. 529, Laws 1939.
State Funds for Maint.: Chap. 529, Laws 1939.

Group 1 - 100%

Prefix No. 526-1016

N. DELAWARE AVE.-N. WOOLSEY AVE. SECTION

PROJECT NO. SU-559(2)

NONPARTICIPATING - STATE WORK

Concrete Walks	350 sq.yd.	$4.32	$1,512.00
Reset Mail Box Posts	All Required		500.00
			$2,012.00

N. DELAWARE AVE.-N. WOOLSEY AVE. SECTION

PROJECT NO. SU-559(2)

Railroad Protective Costs - UPRR

Estimate: Inspector for Two Months (H.Q. in Portland)		
Salary = $849/mo. x 2 mo.	=	$1,698.00
+34% Payroll Additives	=	577.32
		$2,275.32
Expenses = $2/da. x 42 da.	=	$ 84.00
Equipment Rental = $9.50/da. x 42 da.	=	$ 399.00
Total R.R. Protective Costs	=	$2,758.32
State will pay up to		$3,000.00

RECEIVED
AUG 6 - 1969

SU-559(2)

7284

August 5, 1969

Cascade Construction Co., Inc.
Foot of S.W. Abernethy Street
Portland, Oregon 97201

Gentlemen:

We enclose for your files a fully executed copy of the following described contract which was awarded to you by the State Highway Commission:

Contract No. 7284 for grading and paving N. Delaware Avenue-N. Hayden Avenue in the city of Portland on North Columbia Boulevard (FAS 940) in Multnomah County.

A copy of this contract is also being sent to the surety on your performance bond.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

er
Enclosure

cc: Rathbone, King & Seeley
Hugh Leedy Insurance Agency
D. J. Barbee
F. D. Morgan
I. D. Merchant
A. E. Johnson
Multnomah County Engineer

RECEIVED
SEP 26 1969
FOR FILING
SU-559(2)
7284

July 24, 1969

Cascade Construction Company, Inc.
Foot of S.W. Abernethy Street
Portland, Oregon 97201

Gentlemen:

The State Highway Commission on July 3, 1969, accepted your proposal for grading and paving N. Delaware Avenue-N. Healey Avenue in the city of Portland on N. Columbia Boulevard (FAS 940) in Multnomah County for the sum of $930,290.60 and referred it to the State Highway Engineer with authority to award the contract as soon as approval of the City of Portland and Multnomah County was received and the sum of $76,700 was deposited by the County.

These conditions were fulfilled and the State Highway Engineer today awarded you the project, which has been assigned Contract No. 7284.

Enclosed are three copies of this contract. Two of these copies should be signed on the contract and bond pages and returned to this office for completion. Please follow exactly the instructions given on the blue slip attached to the contract.

The third copy of the contract stamped "Advance Copy to be Retained by Contractor" is furnished for your information pending receipt of a fully executed copy.

The calendar workday count on this contract will begin August 5, 1969.

Very truly yours,

Floyd Quarry, Secretary
OREGON STATE HIGHWAY COMMISSION

cc
Enclosures

bc: Pacific Builder & Engr., Inc., Seattle, Wash.
Daily Journal of Commerce, Seattle, Wn., & Portland, Ore.
Frank Morgan
D. J. Barbee
I. D. Merchant
William Geibel (SAIF)
A. E. Johnson
Multnomah County Engineer

FORM PR-48
(REV. 7-67)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

TRANSMITTAL AND REQUEST FOR INITIAL PROGRAM APPROVAL OF PROJECTS

(PPM 21-1)

STATE HIGHWAY DEPARTMENT: Oregon

DATE: 6/4/69

BY (Signature): Mr. Young's May 26, 1969 letter

TITLE:

CLASS OF FEDERAL FUNDS: ☐ FAI ☐ FAP ☐ FAU ☒ FAS ☐ OTHERS

STAGE 1 * ITEM NOS. _____ THRU _____

STAGE 2 ITEM NOS. 1005 THRU 1006

ITEM NO.	PROJECT NOS.	LENGTH (Miles)	TOTAL ESTIMATED COST	FEDERAL FUNDS	OTHER IDENTIFICATION AND/OR REMARKS (State) Location	Work
1005	SU-559(2)	1.00	430,000	258,000	N. Delaware Ave. to N. Woolsey Ave. Section on N. Columbia Blvd., Portland	Grade, drain and High type Pavement
1006	SU-528(3)	1.02	320,000	192,000	Ward Drive to Silverton Road Section on Lancaster Drive, Salem	Grade, drain and High type Pavement

6-4-69 C

6-5

SU-559(2)

1384

copies to Young
Barlow
6-6-69 Cox

RECEIVED
JUN 5 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUN 11 1969

REMARKS (Division)

On Item 1005, SU-559(2) N. Delaware Ave. to N. Woolsey Ave. Section, it is understood that the use of 11' lanes is approved as a Secondary Road Plan design exception.

You are authorized to proceed with actions necessary to advance to completion the physical construction provided for by the above projects in accordance with the provisions of your approved Secondary Road Plan. If you subsequently find that exceptions to the procedure will be needed or that your proposed design standards for these projects are lower than the minimum design standards as approved June 24, 1968, this office should be notified of such proposed exceptions and reasons thereof.

RECOMMENDED		APPROVED	
DATE	SIGNATURE AND TITLE	DATE	SIGNATURE AND TITLE
6-6-69	F B Klaboe, Asst. State Hwy Engr	6/4/69	For R. E. Simpson, Division Engineer

Program approval and any authorization to proceed with a Stage 1 project shall not constitute any commitment of Federal funds nor shall it be construed as creating in any manner, any obligation on the part of the Federal Government to provide Federal funds for the undertaking.

NOTED
F. B. KLABOE

NOTED
R. L. PORTER

GPO 927-984

RECEIVED
JUN 3 - 1969
FOR FILING

OREGON STATE HIGHWAY DEPARTMENT

SU-559(2)
7284

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

May 29, 1969

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street N.E.
Salem, Oregon 97310

North Delaware Avenue-North Woolsey Avenue Section
North Columbia Boulevard, FAS 940
Project SU-559(2)
Multnomah County

Dear Sir:

Programing data for the subject project is being submitted to you for approval. Documentation for the project is hereby submitted pursuant to the provisions of the following Bureau of Public Roads memoranda:

IM 50-2-65 - See attached documentation portfolio relative to paragraph "B."

IM 21-12-67 - See attached documentation portfolio relative to review by CRAG.

IM 21-11-67 - Since designated speeds are now and will be less than 50 miles per hour, IM 21-11-67 does not apply; however, safety features will be incorporated where feasible and practical.

PPM 20-8 - Your memoranda of March 3, 1969 concurred in the waiver of additional hearings. Also see attached statement by County relative to social, economic, and environmental effects of the project.

Sections 30 and 35, 1968 Federal-Aid Highway Act - Although rights of way were acquired prior to August 23, 1968, Multnomah County did provide relocation assistance where necessary and has given the assurances pursuant to Section 35 (see attached certifications).

If we can provide further information to assist in the program approval of this project, please advise.

Very truly yours,

Forrest Cooper
State Highway Engineer

By: H. S. Cox
For County and City Engineer

RECEIVED
JUN 2 1969
OFFICE OF
STATE HIGHWAY ENGINEER

cc F. B. Klaboe
D. J. Barbee
L. H. Young

RHP:eb
Enc.

JUN 2 - 1969
FOR FILING
SU-559(2)
7284

May 26, 1969

Mr. R. R. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street N. E.
Salem, Oregon

Dear Sir:

We are enclosing revised FR.-1 forms for the Secondary Federal-Aid Project, Item 1006, Project No. SU-559(2). The project has been revised as to project length and cost. We wish these FR.-1 forms to be substituted for those submitted with our letter of April 11, 1969.

Action was deferred on this project by your letter of April 18, 1969, pending approval of CRAG. We received CRAG's approval April 25, 1969, a copy of same is enclosed.

We desire to receive bids for this project on June 26, 1969.

Very truly yours,

Fewront Cooper
State Highway Engineer

By

L. H. Young
Program and Planning Engineer

Encl.

RNC:ia

MONTHLY TRANSACTION NO.

DATE SUBMITTED TO W. O.

FORM PR-1 (REV. 4-61) Rev. 5-26-69

FEDERAL - AID PRO (PPM 21-1

CARD 2 — REPORT NUMBER (19)(20): 1 — PROJECT LOCATION (45 typewriter spaces) (21): Co. Rd. N. Woolsey Ave. to N. Delaware Ave. (65)

ADT — PRESENT: 8,800 — FUTURE (66): 17,000 — YEAR (70)(71)(72): 89

CARD 3 — CHARACTER OF PROPOSED WORK (35 typewriter spaces) (26)(62): Gr. Dr. H.T. Pave. — NATL. FOREST (63)(65) — FH ROUTE NO. (66)(68) — SUPV AGCY (69) — DA CLASSIF. (70) — DA AREA (71) — EMERG. YR. (72)(73) — PL. AUTH YR (74)(76)

CARD 4 — CLASS OF FEDERAL FUNDS: Secondary — COUNTY NAME: Mu

NAME OF URBAN AREA (17-31): Portland — ROUTE NO. S — FEDERAL - AID: 940

CARD 5	LINE NO.	CHANGE CODE	PROJECT CODE	WORK CLASS	WORK TYPE (42-46)	STEP (53)	TERMINI (Full description)	MILES (54)(58)	ESTIMATED PROJECT COST: TOTAL ESTIMATED COST (59)(66)	ESTIMATED PROJECT COST: FEDERAL FUNDS (67)(76)
1	(1-4)(5)	(10)	41	42						
5					PE		Co. Rd. N. Woolsey Ave. to N. Delaware Ave.			
5					ROW					
5					CONST (CODE)			1.00	430,000	258,000
							PROJECT TOTALS	1.00	430,000	258,000

(16) (23)(24) (33)

CARD 1 — CODE 1 — PREPARED BY

1 — 14 — PROGRAM APPROVAL DATES

Budget Bureau No. 41-R2067; Approval Expires February 28, 1966

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

ev. 5-26-69

FEDERAL-AID PROGRAM DATA

(PPM 21-1)

		PRESENT	FUTURE	YEAR	REGION	STATE NAME	STATE CODE	APPN CODE	ITEM NO.
ware Ave.	ADT	8,800	17,000	89	08	Oregon	35	022	1005
65		(66)	(70)	(71) (72)			(2) (3)	(4) (9)	(14) (18)

	SUPV AGCY	DA CLASSIF.	DA AREA	EMERG. YR.	PL. AUTH YR	PROJECT NUMBER PREFIX LETTER(S)	NUMBER	SEQ. NO.	I. Projects Only POST MI.	DESIG.
						SU	559	(2)		
(68)	(69)	(70)	(71)	(72) (73)	(74) (75)	14 23	7 13		(24) (26)	27

COUNTY NAME: Multnomah — CODE: 051 (14) (16)

PROGRAM STAGE: [ ] 1 OR [X] 2

ROUTE NO. S — FEDERAL-AID: 940 (32) — STATE: Co. Rd. (36) (37) — U.S. (41)

	MILES	ESTIMATED PROJECT COST BY PHASES: TOTAL ESTIMATED COST	FEDERAL FUNDS	STATE FUNDS	OTHER FUNDS	CHARACTER OF PROPOSED WORK *(Full description)*
	(54) (56)	(59) (66)	(67) (76)			
Ave						Gr. Dr. 4 - 11' lanes H. T. Pave. with curb and 14' median.
	1.00	430,000	258,000	86,000	86,000 (Co.)	ROW - 80' min.; Access Con trol - none; Parking Restrictions - Complete.
CT S	1.00	430,000	258,000	86,000	86,000 (Co.)	
		(16) (23)	(24) (33)			

REMARKS

Relocation assistance - none involved.
Minor drainage work beyond the limits of the project.

:

USCOMM DUSCOMM-DC 48905-P61

N. WOOLSEY AVE.-N. DELAWARE AVE. SECTION
PROJECT SU-559(2)

EXISTING FACILITIES

One mile has two - 11' A.C. travel lanes with 8' gravel shoulders. The remaining 0.32 mile has two - 12' A.C. travel lanes with 8' gravel shoulders. Three railroad crossings, at MP 2.88, 2.97 and 3.13.

ADJACENT SECTIONS

East End - Two - 12' travel lanes with 8' gravel shoulders.
West End - Two - 11' travel lanes with 6' gravel shoulders.

PROJECT DATA

Grade, drain, curb, and pave with 3-1/2" A.C.; with 7' crushed stone footpaths; replace in kind destroyed sidewalk; roadway to be 64' in width having 4 - 11' travel lanes, 14' left-turn refuge, and 3' shy distance; parking on street will be prohibited. But for brief periods, roadway must remain open.

This is an interim facility which will serve the adjacent industrial area until the Columbia Slough Freeway, immediately north of this project, can be constructed.

Right of Way: 80' with easements for slopes.
Access Control: None

RR Crossings adjacent to west end of project — OWR&N Railroad

	St. Johns Branch	Mainline	Kenton Line
Mile Point Location	2.88	2.97	3.13
No. of Tracks	1	1	1
No. of Trains	6	14	12
High Speed Trains	None	None	None
Present Protection	Advance warning signs and flashing lights.		
Proposed Protection	Same as present except flashing lights cantilevered over each of the four lanes at each crossing (see Remarks).		
Railroad Benefit	None	None	None

The OWR&N Co. has 3 single crossings of N. Columbia Blvd. beyond the west limits of the project. Each crossing presently has flashing lights, bells, cross bucks and advance warning signs.

Minimum Design Standards:

Exception to minimum design s travel lanes and 3' shy distanc for this exception to standards letter of April 9, 1969 and appr

System Action

Completed

Public Hearing

Has been held. Pertinent data been previously furnished. Th mitted for review and approved IM 21-12-67 on April 22, 1969 resolution in 1966.

Remarks

The 0.32 mile to the west of th three RR crossings will be imp project in the near future by a or by county forces. The coun additional warning signs for th tween the existing roadway and structed under this project.

Route Data

See SU-559(1)

N. WOOLSEY AVE.-N. DELAWARE AVE. SECTION
PROJECT SU-559(2)

. travel lanes with 8' gravel
ile has two - 12' A.C. travel
Three railroad crossings, at

el lanes with 8' gravel shoulders.
el lanes with 6' gravel shoulders.

ve with 3-1/2" A.C.; with 7'
in kind destroyed sidewalk;
4 - 11' travel lanes, 14' left-
parking on street will be
, roadway must remain open.
which will serve the adjacent
Slough Freeway, immediately
ructed.

ements for slopes.

WR&N Railroad

nch	Mainline	Kenton Line
	2.97	3.13
	1	1
	14	12
	None	None

e warning signs and flashing lights.
s present except flashing lights
evered over each of the four lanes
h crossing (see Remarks).

	None	None

ossings of N. Columbia Blvd.
oject. Each crossing presently
bucks and advance warning signs.

Minimum Design Standards:

Exception to minimum design standards - substandard 11' travel lanes and 3' shy distance on shoulders. Justification for this exception to standards has been furnished by our letter of April 9, 1969 and approved by BPR April 11, 1969.

System Action

Completed

Public Hearing

Has been held. Pertinent data required by IM 50-2-65 have been previously furnished. The proposed project was submitted for review and approved by CRAG in compliance with IM 21-12-67 on April 22, 1969. Right of way acquired by resolution in 1966.

Remarks

The 0.32 mile to the west of this project which includes the three RR crossings will be improved to the standards of this project in the near future by a Federal-aid project contract or by county forces. The county will place the necessary additional warning signs for the temporary connection between the existing roadway and the new section to be constructed under this project.

Route Data

See SU-559(1)

RECEIVED
MAY 22 1969
FOR FILING
SU-559(2)
7284

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
May 21, 1969

SUBJECT: FAS 940, Multnomah County

To: Mr. F. B. Klaboe
Assistant State Highway Engineer
O F F I C E

Pursuant to the provisions of PPM 20-8, location and design approval is hereby requested for the following FAS-C project:

Multnomah County
North Woolsey Avenue-North Delaware Avenue Section
North Columbia Boulevard, FAS 940

Public hearing covering this section was held on December 27, 1966, in combination with the hearing for the SP&S Railway Overcrossing and UPRR Undercrossing which project was completed in 1968. The County has considered the social, economic, and environmental effects of the project; and all documentation will be on file in this office for BPR review.

Harold Reynoldson
Planning Engineer
County and City Division

HR:mm

RECEIVED
MAY 22 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
APR 23 1969
FOR FILING

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301
DATE: April 18, 1969

In reply refer to: 08-35.3

SU-559(2)

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

7284

FROM : for R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project SU 559(2)
N. Woolsey Ave.-N. Delaware Ave. Section
North Columbia Blvd.-County Road

We hereby acknowledge receipt of the program data for the subject project transmitted with Mr. Ellison's April 11, 1969 letter. However, approval of this program must be deferred pending satisfactory compliance with the requirements of IM 21-12-67.

4-23-69
RETURNED TO
Young
By Asst. State Hwy. Engr.

NOTED
F. B. KLABOE

RECEIVED
APR 22 1969
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
APR 16 1969
FOR FILE

SU-559(2)
7284

April 11, 1969

Mr. E. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street N. E.
Salem, Oregon

Dear Sir:

We are submitting program data for one Secondary project, Item 1005, Project SU-559(2), N. Wesleay Ave. -N. Delaware Ave. (Portland) Section, which we desire to have included in the Federal-Aid Secondary Highway Program.

This project has been selected by the State Highway Commission and local authorities in cooperation with one another, as required by the Federal-Aid Act.

It is our intention to receive bids for this project on May 15, 1969.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

L. H. Young
Program and Planning Engineer

RNC:ls

MONTHLY TRANSACTION NO.

DATE SUBMITTED TO W.O.

FORM PR-1 (REV. 4-81)

FEDERAL - AID PRO

(PPM 21-1)

CARD 2	REPORT NUMBER (19)–(20): 1	PROJECT LOCATION (45 typewriter spaces) (21–65): Co. Rd. N. Woolsey Ave. to N. Delaware Ave.	ADT	PRESENT: 8,800	FUTURE (66)–(70): 17,000	YEAR (71)–(72): 89	
CARD 3	CHARACTER OF PROPOSED WORK (35 typewriter spaces) (26–62): Gr. Dr. H.T. Pave.	NATL. FOREST (63)–(65)	FH ROUTE NO. (66)–(68)	SUPV AGCY (69)	DA CLASSIF. (70)	DA AREA (71)	EMERG. YR. (72)–(73) / PL. AUTH YR (74)–(75)
CARD 4	CLASS OF FEDERAL FUNDS: Secondary					COUNTY NAME: Multno	
	NAME OF URBAN AREA (17–21): Portland					ROUTE NO.: S	FEDERAL - AID: 940

CARD 5	LINE NO.	CHANGE CODE	PROJECT CODE	WORK CLASS	WORK TYPE (43–46)	STEP (53)	TERMINI (Full description) (54–58)	MILES (59–64)	ESTIMATED PROJECT COST: TOTAL ESTIMATED COST (66–67)	ESTIMATED PROJECT COST: FEDERAL FUNDS (68–70)
1	(1418)	(15)	41	42						
5					PE		Co. Rd. N. Woolsey Ave to N. Delaware Ave.			
5					ROW					
5					CONST (CODE)			1.32	450,000	270,000
CARD 1	CODE 1	PREPARED BY					PROJECT TOTALS	1.32	450,000	270,000
1	14	PROGRAM APPROVAL DATES							(16) (23) (24) (33)	

Budget Bureau No. 41-R2067; Approval Expires February 28, 196

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

FEDERAL-AID PROGRAM DATA

(PPM 21-1)

re Ave.	ADT	PRESENT	FUTURE	YEAR	REGION	STATE NAME	STATE CODE	APPN CODE	ITEM NO.
		8,800	17,000	89	08	Oregon	35	022	1005

SUPV AGCY	DA CLASSIF.	DA AREA	EMERG. YR.	PL. AUTH YR	PROJECT NUMBER PREFIX LETTER(S)	NUMBER	SEQ. NO.	T. Projects Only POST IN.	DESIG.
					SU	559	(2)		

COUNTY NAME: Multnomah — CODE: 051

ROUTE NO. S — FEDERAL-AID: 940 — STATE: Co. Rd. — U.S.:

PROGRAM STAGE: [ ] 1 OR [X] 2

MILES	ESTIMATED PROJECT COST BY PHASES: TOTAL ESTIMATED COST	FEDERAL FUNDS	STATE FUNDS	OTHER FUNDS	CHARACTER OF PROPOSED WORK (Full description)
					Gr. Dr. 4 - 11' lanes H. T. Pave. with curb and 14' median.
					ROW - 80' min.; Access Control - none Parking Restrictions - Complete.
1.32	450,000	270,000	90,000	90,000 (Co.)	
1.32	450,000	270,000	90,000	90,000 (Co.)	

REMARKS

Relocation assistance - none involved.
Minor drainage work beyond the limits of the project.

USCOMM DUSCOMM-DC 48005-P6

N. WOOLSEY AVE. -N. DELAWARE AVE. SECTION
PROJECT SU-559(2)

EXISTING FACILITIES

One mile has two - 11' A.C. travel lanes with 8' gravel shoulders. The remaining 0.32 mile has two - 12' A.C. travel lanes with 8' gravel shoulders. Three railroad crossings, at MP 2.88, 2.97 and 3.13.

ADJACENT SECTIONS

East End - Two - 12' travel lanes with 8' gravel shoulders.
West End - Two - 11' travel lanes with 6' gravel shoulders.

PROJECT DATA

Grade, drain, curb, and pave with 3-1/2" A.C.; with 7' crushed stone footpaths; replace in kind destroyed sidewalk; roadway to be 64' in width having 4 - 11' travel lanes, 14' left-turn refuge, and 3' shy distance; parking on street will be prohibited. The improvement of the three railroad crossings are Railroad responsibility so will not be included in this project. But for brief periods, roadway must remain open.

This is an interim facility which will serve the adjacent industrial area until the Columbia Slough Freeway, immediately north of this project, can be constructed.

Right of Way: 80' with easements for slopes.
Access Control: None

Railroad Crossings: OWR&N Railroad

	St. Johns Branch	Mainline	Kenton Line
Mile Point Location	2.88	2.97	3.13
No. of tracks	1	1	1
No. of trains	6	14	12
High speed trains	None	None	None
Present protection	Advance warning signs and flashing lights.		
Proposed protection	Automatic drop arm signals		
Railroad benefit	None	None	None

The OWR&N Company has 3 single crossings of N. Columbia Blvd. within the limits of the project. Each crossing presently has flashing lights, bells, cross bucks and advance warning signs. Adequate crossing protection including automatic drop arm signals will be provided by others either before or within a reasonable time after the project is completed.

Minimum Design Standards:

Exception to minimum design standar travel lanes and 3' shy distance on sh for this exception to standards has be letter of April 9, 1969.

System Action

Completed

Public Hearing

Has been held. Pertinent data requir been previously furnished. The prop mitted for review and approved by C IM 21-12-67.

Unusual or Complicated Situations

Since the county has prior rights on provements of the three railroad cro the railroad's responsibility. The r to an agreement with Multnomah Co tain the three crossings which includ one foot outside of the tracks--this w date.

Route Data

See SU-559(1)

WOOLSEY AVE. -N. DELAWARE AVE. SECTION
PROJECT SU-559(2)

travel lanes with 8' gravel
e has two - 12' A.C. travel
ee railroad crossings, at

lanes with 8' gravel shoulders.
lanes with 6' gravel shoulders.

e with 3-1/2" A.C.; with 7'
kind destroyed sidewalk;
11' travel lanes, 14' left-
king on street will be pro-
ee railroad crossings are
e included in this project.
remain open.
hich will serve the adjacent
ough Freeway, immediately
cted.

s for slopes.

oad

Mainline	Kenton Line
2.97	3.13
1	1
14	12
None	None

ing signs and flashing lights.
op arm signals

None	None

rossings of N. Columbia
. Each crossing presently
ks and advance warning
including automatic drop
rs either before or within a
completed.

Minimum Design Standards:

Exception to minimum design standards - substandard 11' travel lanes and 3' shy distance on shoulders. Justification for this exception to standards has been furnished by our letter of April 9, 1969.

System Action

Completed

Public Hearing

Has been held. Pertinent data required by IM 50-2-65 have been previously furnished. The proposed project was submitted for review and approved by CRAG in compliance with IM 21-12-67.

Unusual or Complicated Situations

Since the county has prior rights on this section, the improvements of the three railroad crossings (OWR&N) are the railroad's responsibility. The railroad will, according to an agreement with Multnomah County, improve and maintain the three crossings which includes the area between and one foot outside of the tracks--this will be done at a later date.

Route Data

See SU-559(1)

RECEIVED
APR 15 1969

Memorandum

FOR FILES

SU-559(2)

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

7284

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

DATE: April 11, 1969

In reply refer to: 08-35-DA

SUBJECT: Oregon Project S-559(--)
North Delaware-North Woolsey Avenue Section
Columbia Blvd.

Reference is made to Mr. Cox's letter of April 9, 1969 submitting information in support of modification of standards on this project.

The information presented appears to adequately support a modification utilizing the 64' total width as requested and the use of 11' lanes for the type of traffic involved should be satisfactory. We concur in these features of the proposal.

We are concerned over the railroad crossing appearing in the sketch and feel the program should include adequate assurances that proper signalization and gates will be provided prior to completion of the project.

4-15-69

Cof - Young Barber

BY ASST. STATE HWY. ENGR.

NOTED
F. B. KLABOE

RECEIVED
APR 14 1969
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

FORM FHWA-1022 (REV. 6-67)

RECEIVED
APR 15 1969

Commissioners
GLENN L. JACKSON, CHAIRMAN
PORTLAND
DAVID B. SIMPSON, MEMBER
PORTLAND
FRED W. HILL, MEMBER
PENDLETON

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
SALEM 97310

April 9, 1969

SU-559(2)
7228

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street N.E.
Salem, Oregon 97310

Dear Mr. Simpson:

Attached is a statement submitted by Multnomah County at the time they made a project application for the North Delaware Avenue-North Woolsey Avenue Section on North Columbia Boulevard, FAS 940, in north Portland, Multnomah County. Also attached is the typical section as designed by the Multnomah County Department of Public Works. We concur in Multnomah County's engineering judgment in the design of this particular project and your concurrence is requested.

You will note that the County has designed a 64' paved section between curbs. It is intended to provide four-11' travel lanes, a 14' center median for left-turn movements, and 3' shy distances from the curbs. On-street parking will be prohibited since the industries adjacent to the project provide off-street parking facilities. The typical section described above was developed by the County and the State Highway Department as a result of a conference held between representatives of the Multnomah County Department of Public Works, State Highway Department, and Bureau of Public Roads (Mr. Willis Graffe, Area Engineer).

We feel that the typical section developed by the County, although not quite compatible to our Secondary Road Plan Standards regarding lack of shoulders or parking lanes, is nevertheless justifiable when considering the limitations of right of way width and restrictive appurtenances. It should also be noted that this is a continuation of the same basic design section that has prevailed on other projects along North Columbia Boulevard which have been constructed both with and without Federal funds.

The proposed project has been sent to CRAG for review and comment; and the advisory committee, at its meeting on March 29 favored the project as requested by the County.

RECEIVED
APR 10 1969
OFFICE OF
STATE HIGHWAY ENGINEER

Very truly yours,

Forrest Cooper
State Highway Engineer

By: H. S. Cox
County and City Engineer

cc: Forrest Cooper
R. L. Forber
F. B. Klaboe
D. J. Barbee
L. H. Young
L. W. Rulien

RHP:ch
Enc.

NOTED
FORREST COOPER

N. COLUMBIA BLVD. I 940 - PROJECT REQUEST - EXHIBIT "C"
(Unusual or Complicated Circumstances - Page 7)

The requested project is to be a four lane highway running through a basically industrial area. It is designed to connect the Rivergate Industrial Area to "Interstate Highway 5" and to serve the industries immediately adjacent to it.

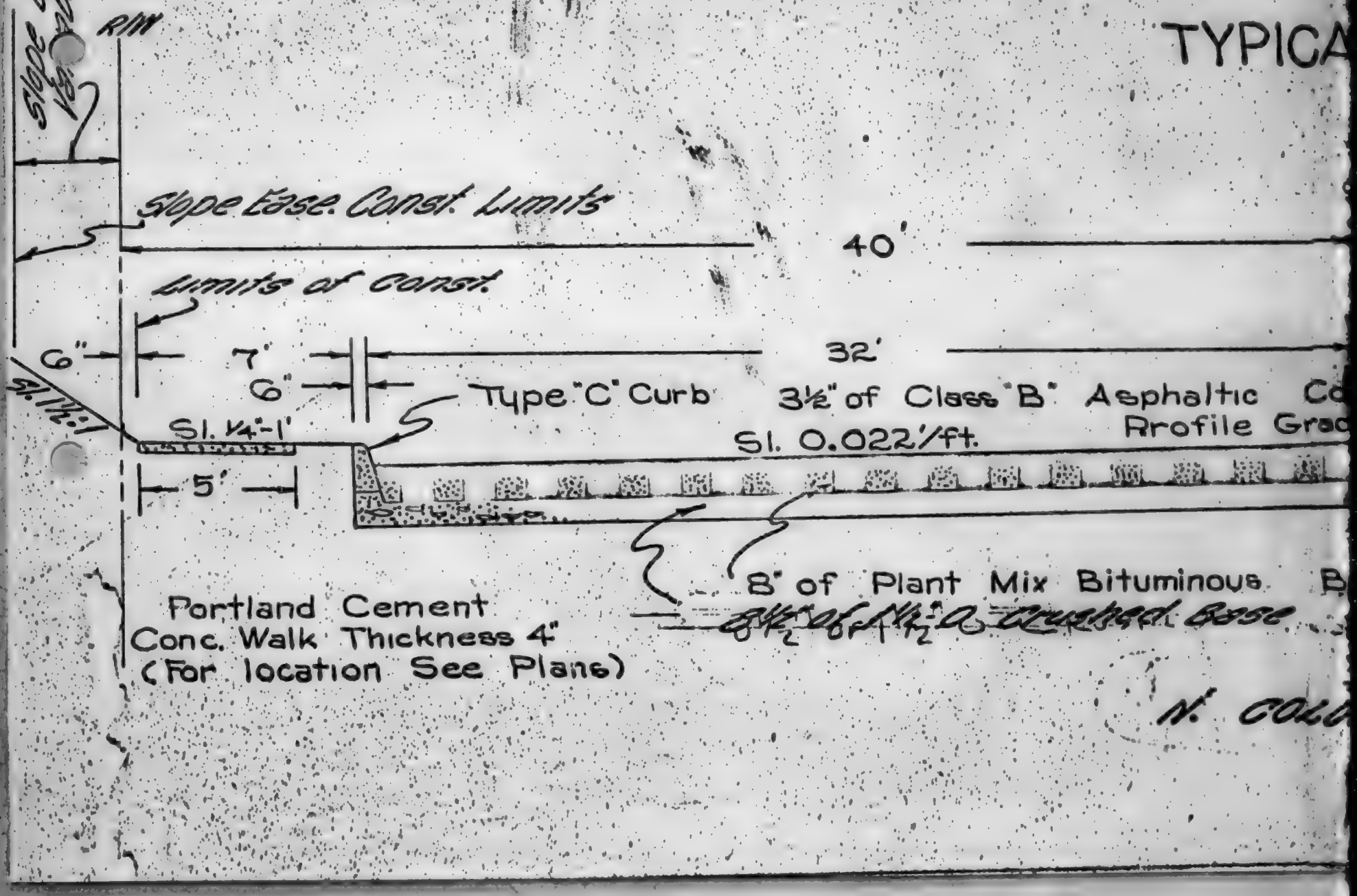
This project is to serve as an interim facility only until such time as the proposed "Columbia Slough Freeway", immediately north of this project, can be constructed, after which Columbia Blvd. will become merely a major street. The existing right of way is 80 feet in width, bordered on the north by the Union Pacific Railroad main freight line to the east, and on the south by a City of Portland park buffer strip and residential areas. Within this right of way electrical power companies maintain both transmission and distribution lines which must be located in the sidewalk areas on either side of the travelled roadway, in addition to providing for pedestrian traffic. The construction of 8 ft. walk areas on either side of the proposed roadway, which is necessary to provide for clearances from the power poles, leaves a remaining width of 64 feet in which to construct a four lane roadway with median and left-turn refuges.

It is our intent to provide a continuous painted median 14 ft. in width in which will be located the necessary left-turn refuges. This median will be bordered on either side by two 11 ft. traffic lanes and a three foot shy distance from the curb. On street parking will be prohibited throughout the length of this project.

We are aware that this roadway does not meet the minimum standards for new construction of this type of facility but request that you seriously consider approving the roadway as planned, bearing in mind that it is only an interim facility and will eventually revert to major street status.

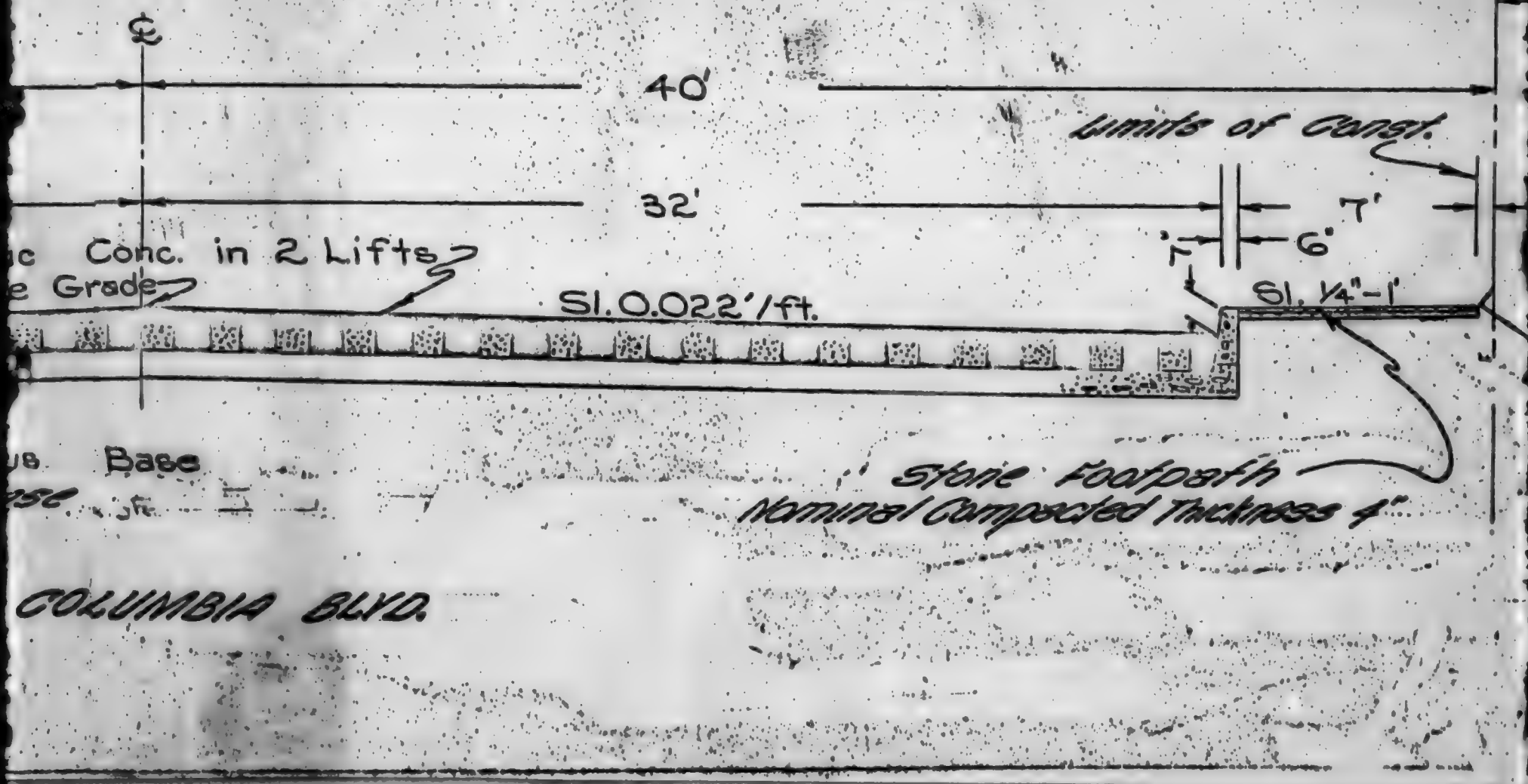
AG:kw
1-15-69

TYPICA

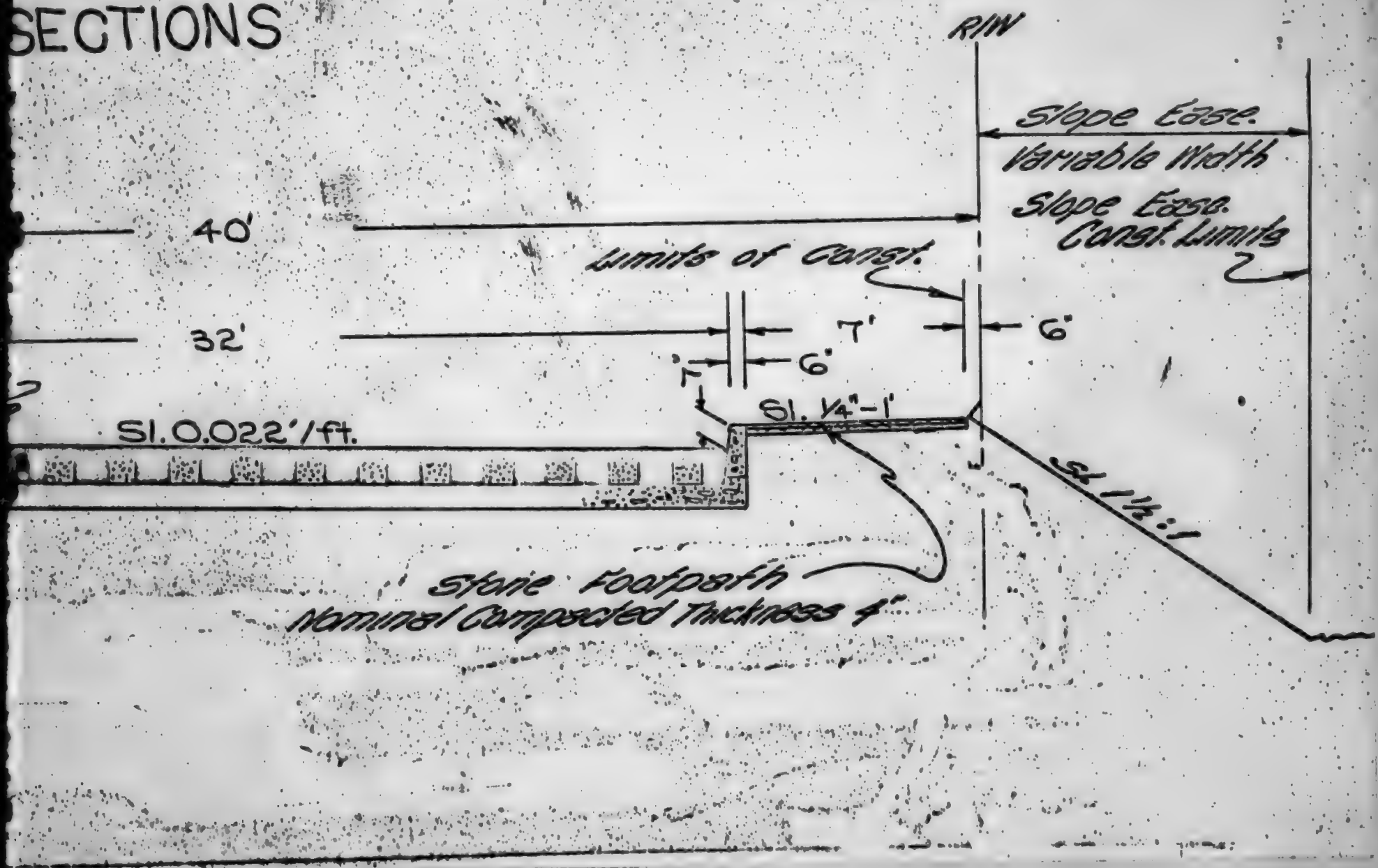


N. COLO

PICAL SECTIONS



SECTIONS


R/W
Slope Ease.
Variable Width
Slope Ease.
Const. Limits
40'
Limits of Const.
32'
7'
6'
7'
6'
S1. 1/4"-1'
S1.0.022'/ft.
St 1½:1
Stone Footpath
Nominal Compacted Thickness 4"

Train speed 25 M.P.H.

PROPOSED PROJECT

FAS - 970

14 trains per day

6 trains per day

12 trains per day

Future Relocation

TUNNEL

STA. 442+70

STA. 445+90

S.P.&S.R.Y. O'XING

STA. 324+00

STA. 317+50

U.P.R.R. U'XING

Sketch Map

Scale 0 600 1200 Ft.

MULTNOMAH COUNTY

OREGON STATE HIGHWAY DEPARTMENT
CONSTRUCTION DIVISION
SOILS AND GEOLOGY SECTION
PROJECT BASE DESIGN

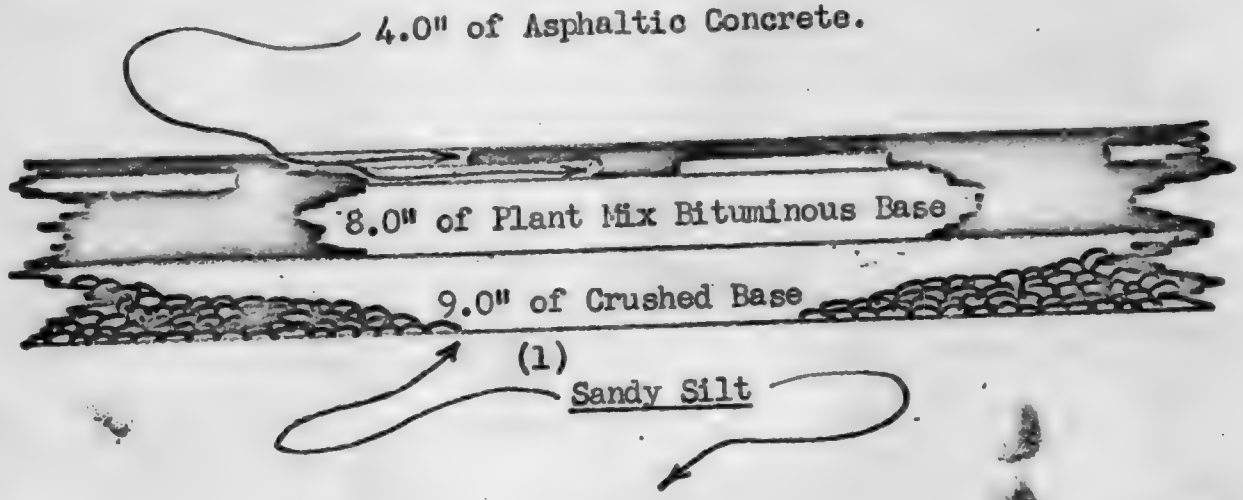
Section N. DELAWARE AVE.-N. WOOLSEY AVE. Highway F. A. S. 940 County MULTNOMAH Prefix

Res. Engr. Approx. Length 1.32± Miles. Sta. to Sta. Date 3-17-69

Mean
Truck A.D.T. 1876 Traffic Coefficient 10.3 18 kip s.a. per day 549.7.

Annual Precipitation 44"± Frost Penetration - - - -.

(1)
Typical Soil
29 LL
3 PI
92 %P 10
80 %P200
8 %Gravel
1 %C Sand
11 %F Sand
65 %Silt
15 %Clay
14 "R" Value



	CBE Total Req.	Credit	Actual Thick.	
		8.0	4.0	AC
		14.5	8.0	PMBB
		9.0	9.0	Cr. Base
	31.5	31.5	21.0	

AASHO CLASSIFICATION:
A-4 (8)

MATERIAL SOURCES:
To be determined by the Engineer.

NOTED
F. B. KLABOE

cc:
B.P.D.
State Highway Engineer
Construction Engineer
Engineer of Materials
Division Engineer
Resident Engineer
Design Engineer
Specifications Engineer
Final Design Engineer
Division Geologist

RECEIVED
APR 10 1969

SU-559(2)
12814
County City (2)

Submitted by E. J. Bigg
for Staff Assistant

Recommended by
Engineer of Materials

Recommended by L. L. Decker
asst Construction Engineer

Approved by
Asst. State Highway Engineer

SECTION: N. DELAWARE-N. WOOLSEY AVE.

HIGHWAY: F. A. S. 940

COUNTY: MULTNOMAH

"OTHER ROADS"

Traffic Coefficient	A.C. Wearing Surface	P.M.B.B. or ~~EXTRA~~	3/4"-0 Level	Crushed Base	S.S. or L.T.S.	"CBE" Total Requirement	Actual Thickness
9.0 - 10	4.0"	6.0"	—	10.0"	—	29.0"	20.0"
8.0 - 9.0	3.5"	4.0"	—	12.0"	—	26.0"	19.5"
7.0 - 8.0	3.5"	3.0"	—	10.5"	—	23.0"	17.0"
6.0 - 7.0	3.0"	—	2.0"	12.0"	—	20.0"	17.0"
4.8 - 6.0	2.0"	—	2.0"	10.5"	—	16.5"	14.5"
Cars Only	2.0"	—	2.0"	6.0"	—	12.0"	10.0"

Should substitutions be made use the "CBE" Total Requirement column to obtain the "Total Thickness Required" and the table below for values:

1.0"	Asphaltic Concrete	=	2.0" Crushed Base
1.0"	Plant Mix Bituminous Base	=	1.8" Crushed Base
1.0"	Cement Treated Base	=	1.8" Crushed Base
1.0"	Oil Mat	=	1.1" Crushed Base
1.0"	Stone Subbase (Per Standard Specifications plus Supplementals)	=	0.8" Crushed Base
1.0"	Lime Treated Subgrade	=	—" Crushed Base

Above factors apply to materials that comply with the Standard Specifications.

TRAFFIC ANALYSIS

SECTION: N. Columbia Blvd. N. DELEWARE AVE. - N. WOOLSEY AVE.

HIGHWAY: F. A. S. 940

COUNTY: MULTNOMAH

8800 Present ADT (1969)

14.2 Percent Trucks

AXLES	TWO WAY TRUCK ADT	EXPANSION FACTOR	TOTAL TADT	MEAN TADT	ONE WAY EWL	AVERAGE ANNUAL EWL
2	770	2.0	1540	1155	450	519.750
3	255	2.0	510	383	1000	383,000
4	40	2.0	80	60	1250	75,000
5	185	2.0	370	278	3180	884,040
6	0	—	—	—	2570	- - - -
				1876	TOTAL	

TOTAL AVERAGE ANNUAL DESIGN EWL 1,861,790

TWENTY YEAR EWL 37,235,800

TRAFFIC COEFFICIENT 10.3

SECTION: N. DELEWARE AVE. - N. WOOLSEY AVE.

HIGHWAY: F. A. S. 940

COUNTY: MULTNOMAH

PAVEMENT TYPE SELECTION

Principal Factors Governing Selection

1. Traffic Classification: See attached sheet
2. Soils Characteristics: See design chart attached
3. Weather: See design chart attached
4. Performance of Similar Pavements in Area: Good X Fair _____ Poor _____
   Remarks: _____
5. Cost Comparisons: See remarks

Secondary Factors Governing Selection

6. Adjacent Existing Pavements: Generally Asphaltic Concrete
7. Stage Construction: Not applicable
8. Depressed, Surface, or Elevated Design: Surface
9. Conservation of Aggregates: See remarks
10. Stimulation of Competition: See remarks
11. Construction Consideration: See remarks
12. Municipal Preference, Participating Local Government Preference, and Recognition of Local Industry: Multnomah County requested A.C.
13. Traffic Safety: Not a problem
14. Availability of an Adaption of Local Materials or of Local Commercially Produced Paving Mixes: Local materials are adaptable to this type construction.

CONCLUSION AND REMARKS:

No cost comparison made for this project.

See Items 6 and 12.

MAR 6 - 1969

FOR FILING

SU-559(2)
7284

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
March 4, 1969

To: R. L. Schroeder
Assistant Traffic Engineer
BUILDING

SUBJECT: North Delaware Ave.-North Woolsey Avenue Section
North Columbia Boulevard
FAS 940
Multnomah County

Multnomah County has proposed to reconstruct North Columbia Boulevard, FAS 940, between North Delaware Avenue and North Woolsey Avenue as a Federal-aid Secondary Highway project.

Please submit the County's request to CRAG for review and comment pursuant to IM-21-12-67. Maps and project data sheets are attached for your use.

Please inform this office of the date that this project will be on the CRAG agenda.

R. H. Prange
Field Engineer
County and City Division

RHP:eb
Att.

cc Tom Edwards
F. B. Klaboe
D. J. Barbee
L. H. Young
L. W. Rulien

NOTED
F. B. KLABOE

RECEIVED
MAR 5 1969
OFFICE OF
STATE HIGHWAY ENGINEER

PROJECT DATA:
North Delaware Avenue-North Woolsey Avenue Section
North Columbia Boulevard, FAS 940
Multnomah County

Project Description:	Beginning at North Delaware Avenue, thence westerly along North Columbia Boulevard to North Woolsey Avenue and lying immediately south of the northerly city limits of Portland in Multnomah County.
Length of Project:	1.32 miles.
Type of Project:	Grade, drain, curb and pave 64' between curbs.
Number of Lanes:	Four 11' travel lanes, 14' median and 3' sky distances from curbs with no parking.
Right of Way:	80'
Interchanges:	None
Street Intersections:	Major street intersections will be at-grade making use of 14' center median for left turn movements.
Street Closures:	Some minor unimproved streets have been or will be closed.
Present Traffic:	1967 ADT: 7,500-west end; 10,000-east end.

Remarks: The proposed project is intended to provide an interim facility to handle present and to some extent future traffic capacities until such time as the "Columbia Slough Freeway" or some other replacement can be constructed. Because of the close proximity of the Union Pacific Railroad on the north and the City of Portland park buffer strip on the south, it is apparent that the acquisition of sufficient right of way for an expressway or freeway-type facility is impossible. It is anticipated that even after the eventual completion of the "Columbia Slough Freeway" the North Columbia Boulevard facility will be retained as a high-capacity local arterial.

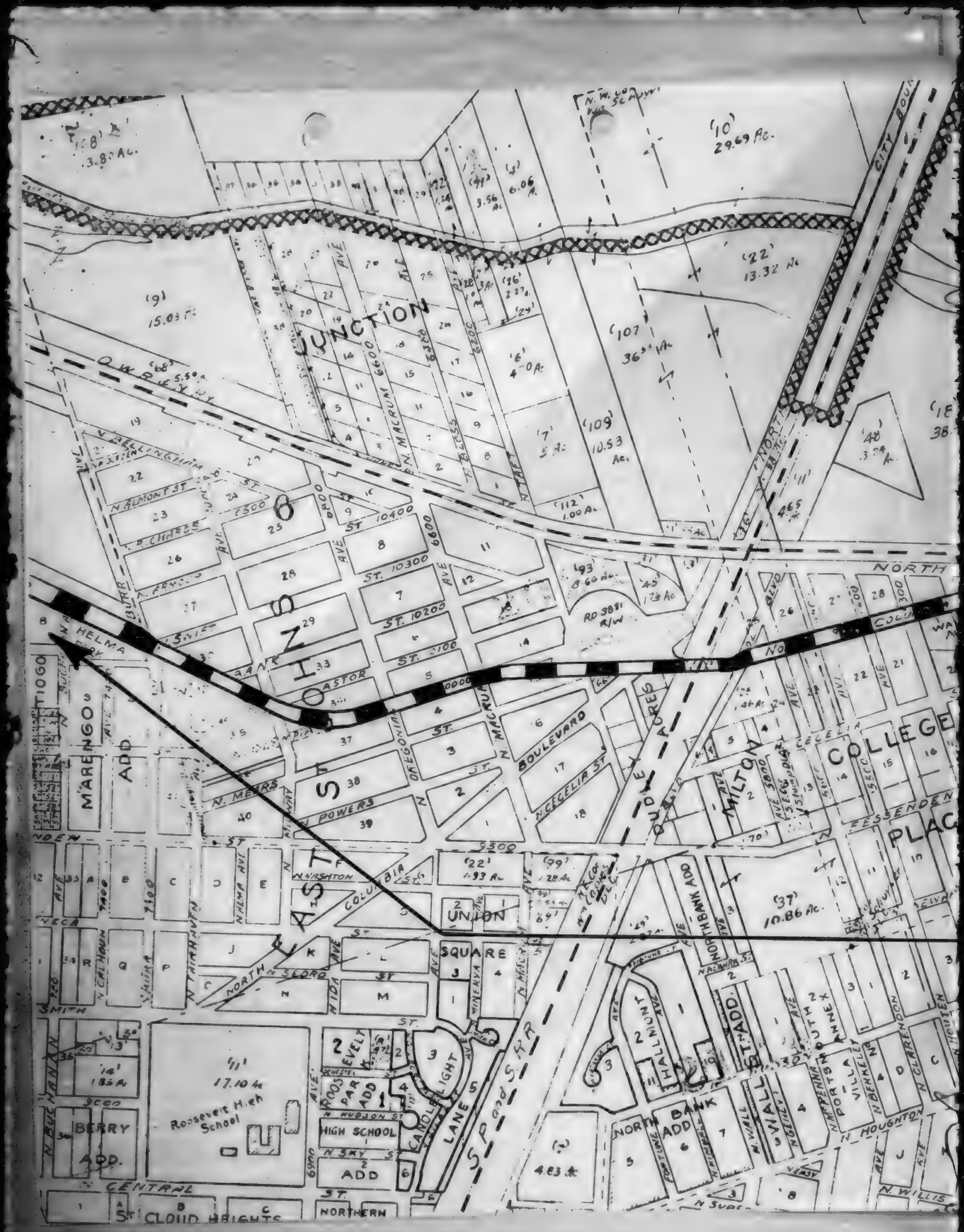

JUNCTION
N. MACRUM 6600
N. THEL ST
N. ALMONT ST
N. BELLINGHAM
N. CHARLES AVE
N. FENCE AVE
N. BUR AVE
N. HELMA PARK AVE
N. MARENGO AVE
N. MEARS ST
N. POWERS ST
N. OREGONIA ST
N. MACRUM BOULEVARD
N. CECELIA ST
QUEEN ACRES
NORTH COLLEGE HILL
N. WASHTON ST
COLUMBIA ST
N. HAMP AVE
N. CALHOUN AVE
N. NATCHEZ AVE
NORTH SEDRO AVE
NIDA ST
SMITH ST
N. BUCHANAN AVE
N. CENTRAL ST
CLOUD HEIGHTS
Roosevelt High School
HIGH SCHOOL
ROOSEVELT PARK ADD
CANDLELIGHT LANE
SPADE STAR
UNION SQUARE
NORTHBANK ADD
HALLMUNT
STADDON
VALLEY
NORTH BANK ADD
BERRY ADD.
MARENGO ADD
N. HOUGHTON
N. WILLIS
N. CLARENDON
N. BEHNFELDT
N. SUGAR
(10) 29.69 Ac.
(22) 13.32 Ac.
(107) 36.51 Ac.
(109) 10.53 Ac.
(9) 15.03 Ac.
(7) 5 Ac.
(6) 4.0 Ac.
(41) 3.56 Ac.
(2) 6.06 Ac.
(108) 3.80 Ac.
(112) 1.00 Ac.
(193) 8.66 Ac.
(45) 1.74 Ac.
(37) 10.86 Ac.
(22) 1.93 Ac.
(99) 1.28 Ac.
(14) 1.85 Ac.
(11) 17.10 Ac.
(1) 4.83 Ac.
RD 3081 R/W
N. W. 40' SCHOOL HWY.
CITY ROUTE
NORTH 36' ST. HWY.
NORTH COLLEGE HILL PLACE
N. HOUGHTON VILLA ADDITION
N. BEHNFELDT ADDITION
N. CLARENDON ADDITION
N. WILLIS AVE
N. SUGAR
N. HOUTEN
N. CECELIA AVE
N. FESSENDEN PLACE
N. HOUGHTON AVE
N. VALLEY AVE
N. MINERVA AVE
N. NATCHEZ AVE
N. HUDSON ST
N. SKY ST
N. FORTUNE ST
N. NORTHBANK ST
N. BEHNFELDT ST
N. HOUGHTON ST
N. WILLIS ST
N. SUGAR ST
N. CLARENDON ST
N. HOUTEN ST
N. CECELIA ST
N. FESSENDEN ST
N. HOUGHTON AVE
N. WILLIS AVE
N. SUGAR AVE
N. CLARENDON AVE
N. HOUTEN AVE
N. CECELIA AVE
N. FESSENDEN AVE

EXHIBIT "A"

Section being applied for app

F.A.S. Funds

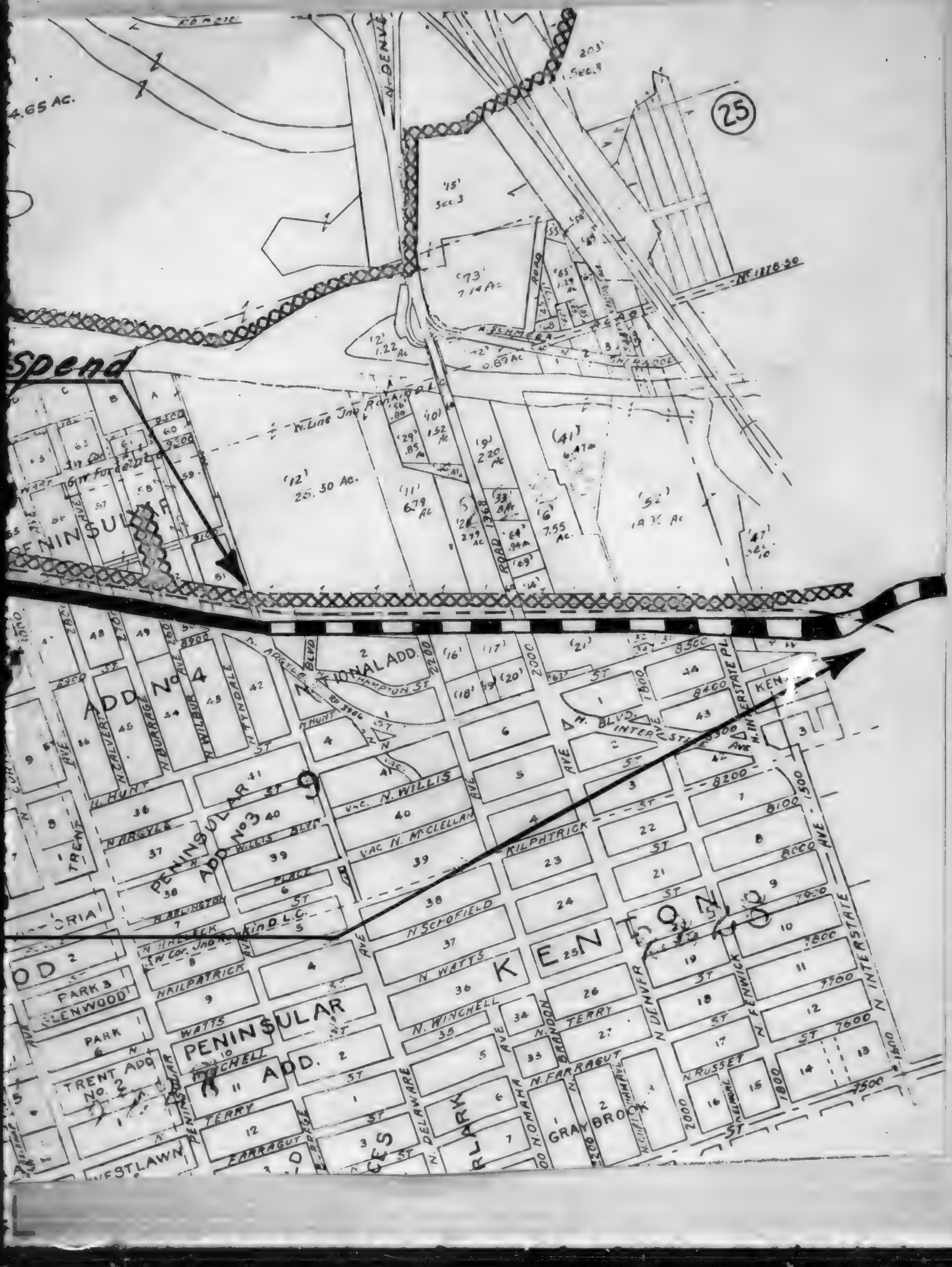
FAS ROUTE #9

PORTSMOUTH VILLA EXTENDED

DAHLKE ADD

UNIVERSITY PARK

Approval to Spend


4.65 AC.
N. DENVER
203'
Sec. 9
25
'15'
Sec 3
'73'
7.14 Ac.
'65'
1.29 Ac
N 1210.20
'2'
1.22 Ac
'72'
0.87 Ac
N. Line Jno. R. Addl
'10'
1.52 Ac
'29'
.85 Ac
'9'
2.20 Ac
'41'
6.47 Ac
'12'
25.50 Ac.
'11'
6.79 Ac
'6'
7.55 Ac.
'52'
14.1 Ac
'47'
Sec. 10
N. Line Jno. R. Addl
PENINSULAR ADD No 4
PENINSULAR ADD No 3
PENINSULAR ADD. 2
PENINSULAR ADD No 9
TRENT ADD No 2
KENWOOD
GRAY BRO
N. ARGYLE BLVD
N. HAMPTON ST
N. HUNT ST
N. WILLIS AVE
N. MCCLELLAN AVE
N. KILPATRICK ST
N. SCHOFIELD AVE
N. WATTS ST
N. WINCHELL ST
N. FARRAGUT TERRY
N. DELAWARE AVE
N. OMAHA AVE
N. DENVER AVE
N. RUSSET
N. INTERSTATE AVE
N. BLVD INTERSTATE
PARK 3
PARK 6
PARK
WESTLAWN
TRENT
ARLINGTON
Vac. N. WILLIS
Vac. N. McCLELLAN
Vac.
Kind D.L.C.
N. Cor. Jno. R. Addl
2200
2000
1800
1600
1500
1400
1300
1200
8500
8400
8300
8200
8100
8000
7900
7800
7700
7600
7500

RECEIVED
MAR 6 - 1969

UNITED STATES GOVERNMENT

Memorandum

SU-5559(2)

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

7284

FROM : R. H. Simpson, Division Engineer
Salem, Oregon

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
477 Cottage Street NE.
Salem, Oregon 97301

DATE: March 3, 1969

In reply refer to: 08-35-EC/400.1

Copy 'No' Hearing file

K L Cox

SUBJECT: Oregon 8559(-)
North Columbia Blvd.
Public Hearing

We have reviewed the information included in your February 11, 1969 letter concerning the status of this project. Based on this information we concur that under the provisions of Paragraph 6d(2)(b) no additional hearings are required for the subject construction project.

NOTED
F.B. MADDOX

copies to Wolfe
Young
Barbee
Cox
Moehring
3-5-69

RECEIVED
MAR 4 1969
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
FEB 13 1969
COMMISSIONERS
GLENN L. JACKSON, CHAIRMAN
MEDFORD
DAVID B. SIMPSON, MEMBER
PORTLAND
FRED W. HILL, MEMBER
PENDLETON

SU-559(2)
7284

STATE OF OREGON
STATE HIGHWAY DEPARTMENT
February 11, 1969

Mr. R. E. Simpson, Division Engineer
Bureau of Public Roads
477 Cottage Street N.E.
Salem, Oregon 97310

Dear Sir:

Multnomah County has requested the improvement of North Columbia Boulevard, FAS 940, as a Federal-aid secondary (FAS-C) project. Their proposal is to reconstruct North Columbia Boulevard to a minimum four-lane arterial standard from North Delaware Avenue to North Woolsey Avenue and it is presently planned to call for bids late this spring.

In December 1966, Multnomah County published the proper notices and held a public hearing for the reconstruction of North Columbia Boulevard between North Albina Avenue and North Oregonian Avenue. You will note on the attached map that the 1966 hearing more than adequately covered the length of the presently proposed project between North Delaware Avenue and North Woolsey Avenue.

The 1966 hearing was held in consideration of Project SU-559(1), SPRS Railway Overcrossing and UPRR Undercrossing, which project was completed in 1968; however, you will also note by the attached copies of the hearing publications that general design features of construction and reconstruction on North Columbia Boulevard were considered.

Since the hearing of December 27, 1966 was held less than three years ago and adequately dealt with major design features of the proposed 1969 project, we feel that, pursuant to paragraphs 6d(1)(b) and 6d(2)(b) of PPM 20-8, neither a corridor hearing nor a design hearing is now required. Your concurrence in our findings is requested.

All additional rights of way for this project have been acquired prior to August 23, 1968.

Very truly yours,

H. S. Cox
County and City Engineer

By: R. H. Prange
Field Engineer

RHP:eb
Att.
cc F. B. Klaboe
D. J. Barbee
L. H. Young
L. W. Rulien

RECEIVED
FEB 13 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
DEC 19 1968
COMMISSIONERS

GLENN E. JACKSON, CHAIRMAN
MEDFORD
DAVID B. SIMPSON, MEMBER
PORTLAND
FRED W. HILL, MEMBER
PENDLETON

SU-559(2)
7284

STATE OF OREGON
STATE HIGHWAY DEPARTMENT

February 12, 1969

Mr. R. H. Simpson, Division Engineer
Bureau of Public Roads
477 Cottage Street N.E.
Salem, Oregon 97310

Dear Sir:

Multnomah County has requested the improvement of North Columbia Boulevard, FAS 940, as a Federal-aid secondary (FAS-C) project. Their proposal is to reconstruct North Columbia Boulevard to a minimum four-lane arterial standard from North Delaware Avenue to North Woolsey Avenue and it is presently planned to call for bids late this spring.

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All additional rights of way for this project have been acquired prior to August 23, 1968.

Very truly yours,

H. S. Cox
County and City Engineer

By: R. H. Prange
Field Engineer

RHP:eb
Att.
cc F. B. Klaboe
D. J. Barbee
L. H. Young
L. W. Rulien

RECEIVED
FEB 13 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JAN 23 1969
FOR FILING

SH-559(2)
7284

January 22, 1969

Oregon State Highway Commission

Gentlemen:

The attached tabulation describes a proposed Federal-aid secondary project in Multnomah County. This project is to grade, base, pave, and curb the North Delaware Avenue-North Healey Avenue Section of North Columbia Boulevard.

This proposed project has been investigated and is eligible for the use of Federal-aid secondary funds. The funds required are estimated to be $520,000, of which $104,000 will be the cost to the State.

This matter will be on the agenda for your consideration at the January 28 meeting and your approval is recommended.

Very truly yours,

Forrest Cooper
State Highway Engineer

Attach.

cc Floyd Query
R. L. Porter
F. B. Klaboe
Victor D. Wolfe
L. M. Young
C. H. Maison
M. S. Cox
F. D. Morgan

HR:eb fn

PROPOSED FISCAL YEARS 1969 & 1970 COUNTY FAS PROJECTS

County	FAS	Section & Description	Programmed Amount	FAS Funds
Multnomah	940	North Delaware Avenue-North Woolsey Avenue Section; North Columbia Boulevard. Grade, base, pave and curb a roadway 64' in width; 1.32 miles	$520,000	1969
		TOTAL	$520,000	

SUMMARY BY FISCAL YEARS	1969	1970	TOTAL
Allocated Funds	$3,969.000	$5,089,000	$9,058,000
Approved Projects (corrected to date)	1,678,000	--	1,678,000
Unprogrammed Balance	2,291,000	5,089,000	7,380,000
Projects Proposed 1/28/69	520,000	--	520,000
Unprogrammed Balance	$1,771,000	$5,089,000	$6,860,000

69-a
1/20/69

MULTNOMAH COUNTY
PROPOSED FAS PROJECT (1969 Funds)

FAS 940 - North Columbia Boulevard; North Delaware Avenue to North Woolsey Avenue Section. Grade, base and pave; 1.32 miles - $520,000.

This project is to grade, drain, base, pave and curb a roadway 64 feet in width. Paving to be A.C. The roadway to have four 11-foot travel lanes, 14-foot median and 3-foot shy distances. No parking.

No additional right of way.

Guardrail to be installed.

Hearing has been held.

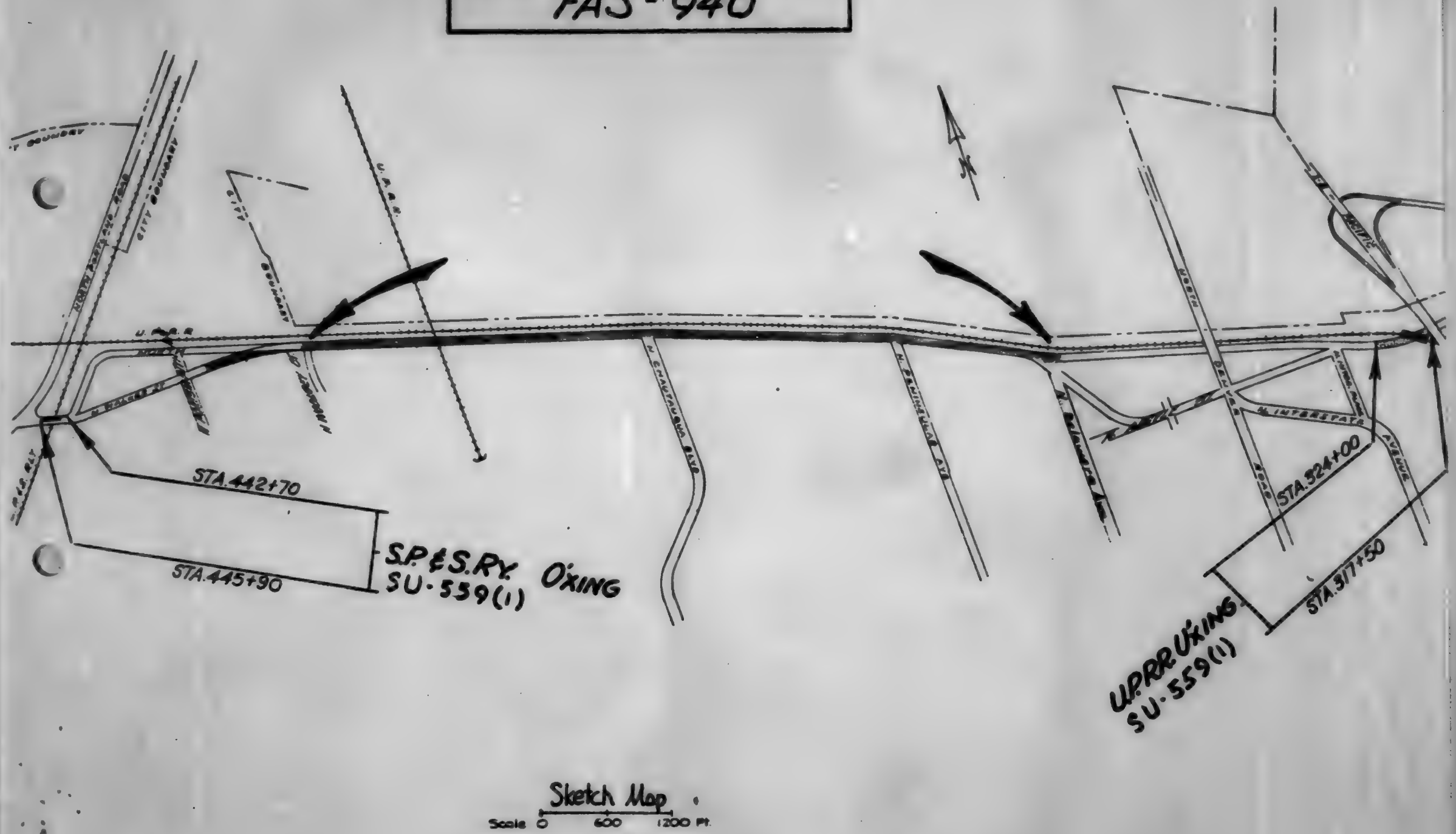
Railroad protection to be advance warning signs and drop arm signals. No. P.U.C. order for railroad crossing.

Survey by County.

69-a
1/16/69

MULTNOMAH COUNTY

PROPOSED PROJECT
FAS - 940



Sketch Map
Scale 0 600 1200 Ft.

FORM S.30 90M 10-68

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
January 21, 1969

SUBJECT: Proposed County FAS Projects

To: Mr. F. B. Klaboe
Assistant State Highway Engineer

B U I L D I N G

Attached are eleven copies of a tabulation, with map attachments, describing a proposed FAS project in Multnomah County.

This proposed project is to grade, base, pave and curb the N. Delaware Avenue-N. Woolsey Avenue Section of the North Columbia Boulevard, FAS 940.

This project has been investigated and is eligible for the use of FAS funds. The FAS funds required are estimated to be $520,000 and of this amount $104,000 will be the cost to the State.

If satisfactory, this project should be presented to the Highway Commission for approval at the January 28 meeting. A draft of a suggested letter to the Commission is also attached.

Harold Reynoldson
Planning Engineer
County and City Division

HR:eb

Att.

RECEIVED
JAN 21 1969
OFFICE OF
STATE HIGHWAY ENGINEER

PROPOSED FISCAL YEARS 1969 [illegible] PROJECTS

County	FAS	Section & Description	Programmed Amount	FAS Funds
Multnomah	940	North Delaware Avenue-North Woolsey Avenue Section; North Columbia Boulevard. Grade, base, pave and curb a roadway 64' in width; 1.32 miles	$520,000	1969
		TOTAL	$520,000	

SUMMARY BY FISCAL YEARS	1969	1970	TOTAL
Allocated Funds	$3,969.000	$5,089,000	$9,058,000
Approved Projects (corrected to date)	1,678,000	--	1,678,000
Unprogrammed Balance	2,291,000	5,089,000	7,380,000
Projects Proposed 1/28/69	520,000	--	520,000
Unprogrammed Balance	$1,771,000	$5,089,000	$6,860,000

69-8
2/13/69

Copy

MULTNOMAH COUNTY
PROPOSED FAS PROJECT (1969 Funds)

FAS 940 - North Columbia Boulevard; North Delaware Avenue to North Woolsey Avenue Section. Grade, base and pave; 1.32 miles - $520,000.

This project is to grade, drain, base, pave and curb a roadway 64 feet in width. Paving to be A.C. The roadway to have four 11-foot travel lanes, 14-foot median and 3-foot shy distances. No parking.

No additional right of way.

Guardrail to be installed.

Hearing has been held.

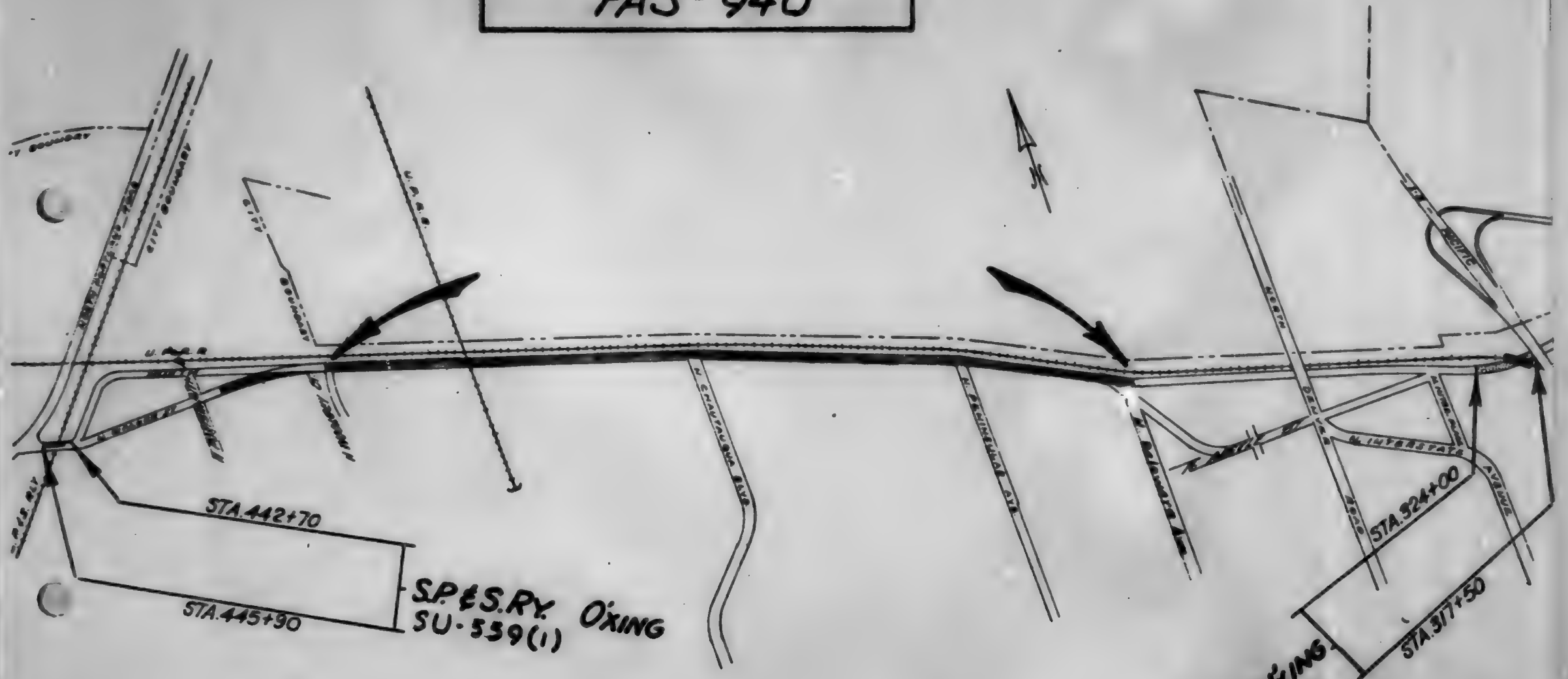
Railroad protection to be advance warning signs and drop arm signals. No. P.U.C. order for railroad crossing.

Survey by County.

69-a
1/16/69

MULTNOMAH COUNTY

PROPOSED PROJECT
FAS - 940



Sketch Map

Scale 0 600 1200 Ft.

27-1121 Murphy Hill Section, Salmon R. Highway, W. of Grand Ronde. 1969

#7285 (Slide correction)

RECEIVED
MAR 11 1970
FOR FILING

27-1121

7285

March 11, 1970

Great American Insurance Co.
Portland Service Office
520 S. W. 6th
Portland, Oregon 97204

Seaboard Surety Company
315 Montgomery Street
San Francisco, California 94104

Gentlemen:

A post-final payment for $500 will be made to Slate-Hall on Contract No. 7285 for slide correction on the Murphy Hill section of the Salmon River Highway in Polk County as soon as the warrant is prepared.

The total amount paid on this contract will be $143,725.11 including the post-final payment. Of the total, $26,911.14 is for force account.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

aj

cc Seaboard Surety Company, New York
Slate-Hall

bc Frank Morgan
Ivan Merchant
V. E. Skoog
Attn: John Herr
R. D. Asburry

RECEIVED
DEC 19 1969
FOR FILING

27-1121
7285

December 19, 1969

Hurlburt, Kennedy, Peterson,
Bowles & Towsley
Attorneys at Law
1201 S.W. 12th Avenue
Portland, Oregon 97205

Attention: Mr. Bruce W. Towsley

Gentlemen:

This is in reply to your letter of December 16 concerning an accident which occurred on or about July 22, 1969, at the Nestucca River Access Road approximately 30 miles west of McMinnville.

We had an active contract last summer in Polk County which may be the project which you are referring to; the contract is described as follows:

Contract No. 7285
Prime Contractor, Slate-Hall
7805 S.W. 40th Avenue
Portland, Oregon 97219
Slide Correction
Murphy Hill Section
Salmon River Highway
Polk County

This contract was awarded July 8, 1969; completed October 3, 1969; and accepted December 1, 1969.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

CWH:or

EARL F. G. HURLBURT
OLYWN E. KENNEDY
CHARLES C. M. PETERSON
GEORGE H. BOWLES
BRUCE W. TOWSLEY

HURLBURT, KENNEDY, PETERSON, BOWLES & TOWSLEY
ATTORNEYS AT LAW
SUITE 811 CENTURY TOWER
1801 S. W. 12TH AVENUE
PORTLAND, OREGON 97205

228-2373

December 16, 1969

Secretary of Commission
State Highway Department
Salem, Oregon 97310

Re: Accident of July 22, 1969

Dear Sir:

Please reroute this letter if necessary.

On or about July 22, 1969 there was a project going on at the Nestucca River Access Road approximately 30 miles west of McMinnville.

This accident involved a truck driven by Alan Tuers and a car owned by Robert Spelbrink.

I would appreciate it very much if you could tell me who was doing the grading on this road and what corporation was involved in the grading of this road, if any. Could you please let me know at your earliest convenience.

Very truly yours,

Bruce W. Towsley

BWT:mah

#7285
Slate-Hall

NOTED
C. W. HEAD

RECEIVED
DEC 17 1969
OREGON
STATE HIGHWAY COMMISSION

RECEIVED
DEC 1 - 1969
FOR FILING

27-1121

7285

December 1, 1969

Oregon State Highway Commission

Gentlemen:

Work was completed October 3, 1969, on Contract No. 7285. The contract was with Slate-Hall and was for slide correction on the Murphy Hill Section of the Salmon River Highway in Polk County.

As the contractor has completed all work according to specifications, I recommend that you accept the project effective December 1, 1969, and that you concur in this procedure at the Commission meeting on December 23.

It is assumed that if you have no objections to this action and you do not advise us to the contrary, I may consider the matter has your approval.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Query
R. L. Porter
Tom Edwards
F. B. Klaboe
V. D. Wolfe
V. E. Skoog
Ivan Merchant
F. D. Morgan
L. H. Young
R. D. Asburry

srb sr

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DEC 2 - 1969
FOR FILING

27-1121
7285

December 1, 1969

Kelly-Buckley-Woodward Company
412 Failing Building
Portland, Oregon 97204

Seaboard Survety Company
311 Montgomery Street
San Francisco, California 94104

Gentlemen:

Contract No. 7285 awarded to Slate-Hall for slide correction on the Murphy Hill section of the Salem River Highway in Polk County was completed on October 3, 1969, and accepted by the Highway Commission on December 1, 1969.

Final payment in the amount of $6,270 will be released to the contractor after December 8, 1969. The total contract amount is $143,225.21 including $36,911.14 for work performed under force account.

No claims for labor or material have been filed with us.

Very truly yours,

Floyd Curry, Secretary
Oregon State Highway Commission

Cm

cc Slate-Hall
7929 S.W. 40th Avenue
Portland, Oregon 97225

Great American Insurance Company
2030 Ninth Avenue
Seattle, Washington 98121

Frank Morgan
Ivan Merchant
V. E. Skoog
Attn: John Kerr
R. D. Asbury

Seaboard Survety Company
100 William Street
New York 38, New York

RECEIVED
DEC 24 1969
FOR FILING

27-1121

7285

39
(11)

November 24, 1969

Slate-Hall
7805 S.W. 40th Avenue
Portland, Oregon 97219

Gentlemen:

The State Highway Commission at its meeting on November 18, 1969, granted your request for a four-day extension of time on Contract No. 7285 for slide correction work on the Murphy Hill Section of the Salmon River Highway in Polk County, which will delete all liquidated damages.

Very truly yours,

Floyd Omery, Secretary
OREGON STATE HIGHWAY COMMISSION

By
C. H. Hand, Assistant Secretary

cr

bc: F. D. Morgan
V. E. Skoog
R. D. Asburry
Arthur Duffy

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7285 Contractor Slate- Hall

Highway Salmon River

Section Murphy Hill

Kind of Work Slide Correction

It is recommended that the request for increase in the number of workdays within which to complete said contract be ~~DENIED~~ or GRANTED. The reasons for such recommendation are as follows:

Recommend 4 days extension for extra work added (P.A. #1 and E.W.O. #3).

Recommended for Approval:

Division Engineer

Construction Engineer or Bridge Engineer

State Highway Engineer

Contract No.	7285
Project designation	State (State-Federal)
Date awarded	July 8, 1969
Work started	July 8, 1969
Per cent completed	100 (Date)
No. of Workdays Allowed	70
No. of Workdays Used	74
No. of Added Workdays Requested	4

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon 97310

Date September 23, 19 69

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 70 days to [illegible] days, within which to complete our Contract No. [illegible], without the assessment of liquidated damages. The said contract is described as follows:

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

Extra work added to the original contract will require time beyond that provided in the contract. Determining the exact number of days is not possible due to inclement weather and unknown amount of extra work that will be required.

Respectfully submitted,

SLATE-HALL
Contractor

By Elton D. Slate
Elton D. Slate, Partner

CONSENT OF SURETY

Date SEPTEMBER 24, 1969

We, GREAT AMERICAN INSURANCE COMPANY, a Corporation of New York, New York,

AND SEABOARD SURETY COMPANY, A Corporation of New York, New York, as

equal Co-Sureties
surety on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

GREAT AMERICAN INSURANCE COMPANY

BY: Fred C. Reed Attorney-in-Fact

COUNTERSIGNED: WELLS-REED-DOCO-WEST Co.

BY: Resident Agent

SEABOARD SURETY COMPANY

BY: Ethel Hold
ETHEL (SEAL) Attorney-in-Fact

COUNTERSIGNED:
HANSEN & DOUGLAS INC., (Of Oregon)

BY: Asst. Sec'y Resident Agents

RECEIVED
NOV 4 - 1969
FOR FILING

27-1121
7285

November 3, 1969

Oregon State Highway Commission

Gentlemen:

Request for Extension of Time
No. 11
November 18, 1969 meeting

Slate-Hall Company has requested a time extension on the Murphy Hill Slide Correction project on the Salmon River Highway in Polk County, Contract No. 7285. The reason for the request is extra work added to the contract.

Two significant orders were added during the project to overcome unforeseen problems in stabilizing the slide area. These involved the removal and replacement of portions of two culverts which had to be done before the planned work could proceed and the late addition of approximately 2,000 yards of rock on the main fill slope to restore it to the proper cross section and stabilize it.

The project was completed October 3 with four days liquidated damages assessed in the amount of $400. I recommend a four-day extension because of the work added to the contract and this will delete all liquidated damages. This is a State project.

This matter will be on the agenda for your consideration at the November 18 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

R. L. Porter
Deputy State Highway Engineer

JAB:fw sr

cc: Floyd Quary
R. L. Porter
F. B. Klaboe
V. D. Wolfe
F. D. Morgan
R. D. Asburry
V. E. Skoog

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7285 Contractor Slate-Hall

Highway Salmon River

Section Murphy Hill

Kind of Work Slide Correction

It is recommended that the request for increase in the number of workdays within which to complete said contract be ~~DENIED~~ or GRANTED. The reasons for such recommendation are as follows:

Recommend 4 days extension for extra work added (F.A. 81 and E.W.O. 63).

Recommended for Approval:

Division Engineer

for Construction Engineer or Bridge Engineer

Assistant State Highway Engineer

Contract No.	7285
Project designation	State State-Federal
Date awarded	July 8, 1969
Work started	July 8, 1969
Per cent completed	100 Date
No. of Workdays Allowed	70
No. of Workdays Used	74
No. of Added Workdays Requested	4

D-200 (Rev.)—SM—9-64

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon 97310

Date September 23, 19 69

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 70 days to see below days, within which to complete our Contract No. 7285, without the assessment of liquidated damages. The said contract is described as follows:

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

Extra work added to the original contract will require time beyond that provided in the contract. Determining the exact number of days is not possible due to inclement weather and unknown amount of extra work that will be required.

Respectfully submitted,

SLATE-HALL
Contractor

By Elton D. Slate
Elton D. Slate, Partner

CONSENT OF SURETY

Date SEPTEMBER 24, 19 69

We, GREAT AMERICAN INSURANCE COMPANY, a Corporation of New York, New York,

AND SEABOARD SURETY COMPANY, A Corporation of New York, New York, as equal Co-Sureties

~~surety~~ on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

GREAT AMERICAN INSURANCE COMPANY

BY: Fred C. Reed
FRED C. REED Attorney-in-fact

COUNTERSIGNED: WELLS-REED-WOOD-WEST Co.

BY: Fred C. Reed
Resident Agent

SEABOARD SURETY COMPANY

BY: Ethel Todd
ETHEL (SEAL) Attorney-in-Fact

COUNTERSIGNED:
HANSEN & ROWLAND INC., (Of Oregon)

BY: C. Todd
Assist Secy. Resident Sgents

FORM E-20 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
October 20, 1969

SUBJECT: Murphy Hill Slide
Contract No. 7285
Time Extension

To:

Mr. F. B. Klaboe
Assistant State Highway Engineer
BUILDING

Slate-Hall have requested an indefinite time extension on this project. At the time their request was prepared, the project was not yet completed. The request is based on extra work added.

Two significant orders were added on this project. EWO No. 3 covered the unanticipated removal and replacement of approximately 180 feet each of two separate existing culverts, which were found to be damaged by the slide movement. These had to be restored before the contractor could proceed with the planned extensions of them. Price Agreement No. 1 was added at a very late stage of the contract and covered the placement of approximately 2,000 yards of pit rock to restore the fill slope and function as a thin inlay. On just a time-money basis, these two orders would justify a 9-day extension. The contractor pursued this project very efficiently and effectively so that these unforeseen problems were overcome with a minimum of delay.

The project was completed October 3 with only 4 days liquidated damages accrued at the rate of $100 per day. I recommend a 4-day extension which will delete all liquidated damages. This is a State project. A rough draft letter to the Highway Commission is enclosed.

F. D. Morgan
Construction Engineer

By John A. Bond
John A. Bond
Construction Administration Engineer

JAB:fw
Attach.
cc V. L. Gallagher

RECEIVED
OCT 23 1969
OFFICE OF
STATE HIGHWAY ENGINEER

27-1121
7285

FORM E-1 (REV. 12-66)

OREGON STATE HIGHWAY DEPARTMENT

FIELD ENGINEER'S WEEKLY REPORT

FOR CONSTRUCTION PROJECTS ONLY
CONSTRUCTION AND BRIDGE DIVISIONS

SECTION: Murphy Hill		WEEK ENDING: October 11, 1969
		SECTION PREFIX: 27 - 1121
HIGHWAY: Salmon River		COUNTY: Polk
NAME OF JOB: Murphy Hill	KIND OF WORK: Slide Correction	
CONTRACTOR: Slate - Hall	CONTRACT NUMBER: 7285	FEDERAL AID PROJECT NUMBER: State
DATE OF CONTRACT: July 8, 1969	DATE WORK STARTED: July 8, 1969	ESTIMATED COMPLETION DATE: October 3, 1969
AVERAGE FORCE ON PROJECT FOR THE WEEK: MEN: 0 SUPERVISION: 1	SPECIFIED WORK DAYS: work SPECIFIED CALENDAR DAYS: 70	WORK DAYS USED: work CALENDAR DAYS USED: 74
	SPECIFIED COMPLETION DATE:	PERCENT OF TIME ELAPSED: 106
PROJECT AUTHORIZATION: $142,442.50		PERCENT OF CONTRACT COMPLETED BASED ON ESTIMATED COST: 100
EXCLUSIVE OF ENGINEERING: $131,157.50	ENGINEERING AUTHORIZATION: $11,295.00 This week: 300.00	
ESTIMATED COST OF COMPLETED PROJECT, EXCLUSIVE OF ENGINEERING: $168,510.00	ENGINEERING COST TO DATE: $12,300.00	PERCENT OF CONTRACT COMPLETED BASED ON TOTAL AUTHORIZATION: 100
ESTIMATED PERCENT: OVERRUN 18.3 %	PERCENT OF AUTHORIZATION: 109 %	DATE PROJECT WAS COMPLETED: October 3, 1969

ESTIMATED PERCENT COMPLETE (ROADWORK)

CLEARING	DRAINAGE	GRADING	BASE				
100	100			Rock Emb. 100	Perf. Pipe 100		

	Drainage			OIL & BITUMINOUS MACADAM	PAVING
MILES IN PROJECT	0.15	0.15	0.15		
MILES PARTIALLY COMPLETED	0.15	0.15	0.15		
MILES COMPLETED	0.15	0.15	0.15		
TOTAL ESTIMATED QUANTITIES (CONTRACT)	22,000 cy	20,500 cy	632 Lin. Ft.		
TOTAL QUANTITIES CORRECTED TO DATE	20,766 cy	19,013 cy	628 Lin. Ft.		
ESTIMATED QUANTITIES MOVED OR PLACED TO DATE	20,766 cy	19,013 cy	628 Lin. Ft.		
AVERAGE DAILY QUANTITIES	1,000 cy	732 cy	53 Lin. Ft.		
AVERAGE DAILY QUANTITIES NECESSARY TO COMPLETE PROJECT ON TIME	0	0	0		
NUMBER OF SHIFTS PER DAY					
HOURS PER SHIFT					

EQUIPMENT USED DURING THE WEEK:

1 Pick up.

ESTIMATED PERCENT COMPLETE (STRUCTURES)

BRIDGE NO.								
PERCENT								

	WEATHER	Calendar WORK DAYS CHARGED	HOURS DELAY	CAUSE OF DELAY
SUNDAY	Fair	0		
MONDAY	Fair	0		
TUESDAY	Cloudy	0		
WEDNESDAY	Showers	0		
THURSDAY	Rain	0		
FRIDAY	Cloudy	0		
SATURDAY	Cloudy	0		

Routing

Morgan — Pease

Decker — RECEIVED — Swan

Bond — OCT 1 — Glenn

Walker — Litchfield

Boehms — Gallagher

Johnson — CONSTRUCTION DIVISION — Stein

UEN GIFFORD

NOTED
R. D. CHURCH

GENERAL DESCRIPTION OF ACTIVITIES FOR THE WEEK

SUNDAY	
MONDAY	
TUESDAY	
WEDNESDAY	
THURSDAY	
FRIDAY	
SATURDAY	

REMARKS

Work on the project and cleanup was completed Friday, October 3. Final inspection was made Monday, October 6 by Assistant Construction Engineer Walker, Assistant Division Engineer Wimer and the undersigned. We expect to submit the semi - final estimate October 20.

FINAL REPORT

SIGNED Arthur Duffy LOCATION Salem

Arthur Duffy

PRIME RESIDENT SUBMIT 2 COPIES. WHEN BRIDGES AND GRADING BOTH ARE INVOLVED, SUBMIT 3 COPIES.

SP°F216

RECEIVED
OCT 10 1969
FOR FILES

27-1121

7245

October 10, 1969

Oregon State Highway Commission

Gentlemen:

An overrun of the project authorization on the Murphy Hill Slide Correction, Salmon River Highway, Contract No. 7245 in Polk County, is expected. Slate-Hall is the contractor.

The reason was the unexpected removal and replacement of 168 feet of culvert pipes which were found to be damaged by the slide activity. These provide critical drainage through the roadbed fill and had to be replaced. It was also found advantageous to add a rock blanket on the unstable fill slope to restore it to its original slope and prevent further erosion.

The overrun amount is expected to be $26,067.50 or 18.3 percent of the original authorization. Your approval is requested which will increase the project authorization to $168,310. This is a State project.

This matter will be on the agenda for your consideration at the November 18 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Query
R. L. Porter
F. B. Klaboe
Victor D. Wolfe
F. D. Morgan
R. D. Asburry
V. E. Skoog
L. H. Young
JAB:fw sr

FORM E-30 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
October 8, 1969

SUBJECT: Murphy Hill Slide Correction
Contract No. 7285
Request for Overrun

To:
Mr. F. B. Klaboe
Assistant State Highway Engineer
BUILDING

Herewith a request for additional authorization on the subject project showing an expected overrun of $26,067.50 or 18.3 percent of the existing contract authorization. Most of this overrun is accounted for by three added orders:

1. Extra Work Order No. 3 covered the unanticipated removal of 168 feet of 30-inch and 18-inch culvert which provided the main cross drainage under the roadway and through the unstable fill area. These pipes were found to be partially collapsed due to the slide activity and they had to be uncovered, removed and replaced with heavier gauge pipe.

2. Price Agreement No. 1 was negotiated late in the contract to restore the fill slope to proper cross section on the downhill side with pit run rock and function as a blanket to prevent further erosion and provide a stable embankment slope. This required some 2,100 cubic yards of rock. It was desirable to do this work under the contract while we could get it done at a very reasonable price.

3. State Force Order No. 2, in the amount of $4,500, covered an estimated 450 tons of A. C. patching of the roadway surface to bring it back to the true grade at the slide break. This had been done earlier in the year but settlement occurred during the life of the contract and was aggravated by the fill removal which was done under Item 1 above.

For further information on the items described above, we attach a plan sheet showing the areas of the project involved. This project is now complete. A rough draft letter to the Highway Commission is attached.

F. D. Morgan
Construction Engineer

RECEIVED
OCT 8 1969
OFFICE OF
STATE HIGHWAY ENGINEER

By John A. Bond
John A. Bond
Construction Administration Engineer

JAB:fw
Enc.
cc V. L. Gallagher

Property Line

T. 6 S.,

Const. Random Fill (from Interceptor Trench Exc.)
Rock Emb.

18" Corr. Stl. Pipe (in pl.)
Remove-100'± Lf.
Extend-300' Lf.
30" Corr. Stl. Pipe (in pl.)
Remove-92'± Lf.
Extend-300' Lf.
Inst. 24" Culv. Pipe-340'
Tr. Exc. 634 C.Y. (Extra Work)
Inst. 8" Perf. Drain Pipe-640'
Spec. Bkfl. 92 C.Y.
Tr. Exc. 98 C.Y. (Extra Work)
Rock Embankment 8,142 C.Y.

Const. Drain Ditch
2' Bottom; 1:1 Slope
Dt. Exc. 30 C.Y. (Extra Work)

State of Oregon

Test Hole 2
Test Hole 3
Test Hole 4
Test Hole 5

E.W.O. #3
P.A. #1
S.F.O. #2

HIGHWAY

State of Oregon

R/W

SALMON

N. 21° 24' 40" W.
N. 7° 01' 40" W.
N. 31° 55' 20" E.

"SC" 14+73.00 P.C.
"SC" 15+65.00 P.T.
"SC" 18+00.06 P.C.
"SC" 20+90.81 P.T.

To Mc Minnville

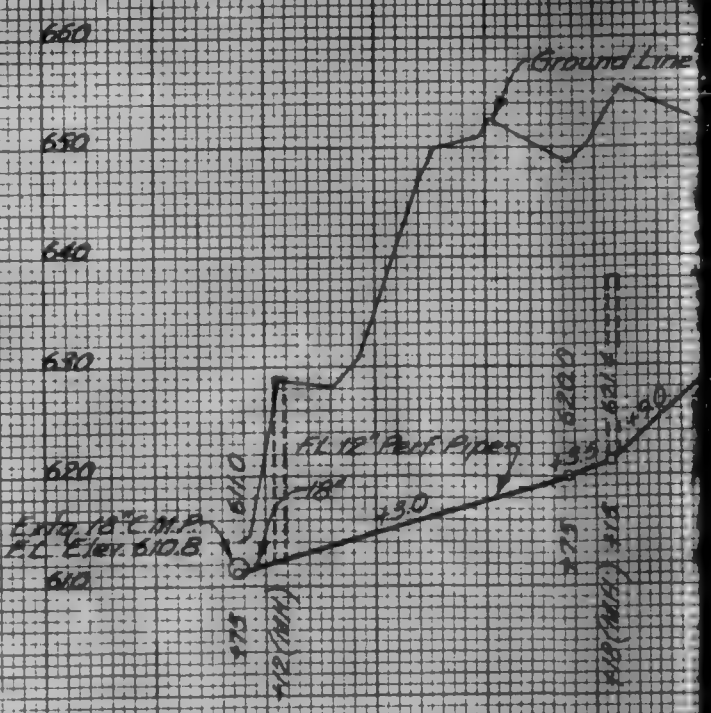
Sec. 8
Sec. 17

℄ R/W

EAST END OF PROJECT
STA. 304+00

State of Oregon

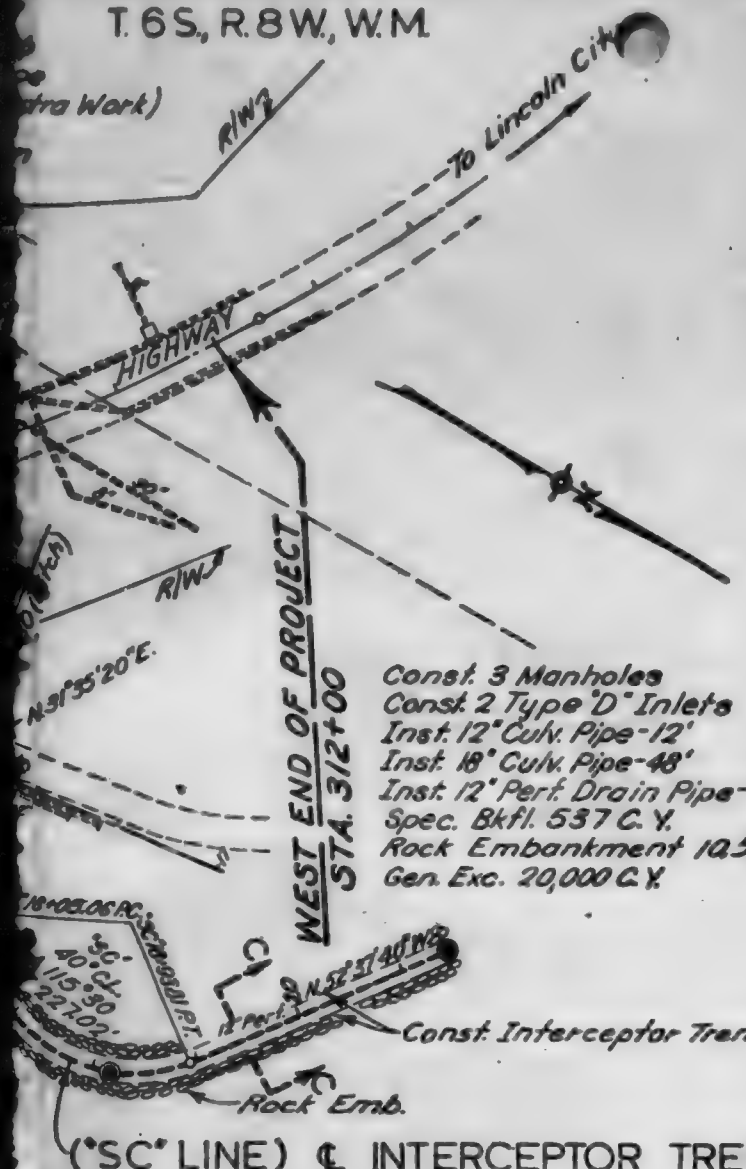
("SC" L



9V-402

MURPHY HILL SECTION SALMON RIVER HIGHWAY POLK COUNTY				SHEET No. 3
FED ROAD Div. No.	STATE	PROJECT NUMBER	FISCAL YEAR	TOTAL SHEETS
8	OREGON	STATE		

T. 6 S., R. 8 W., W.M.

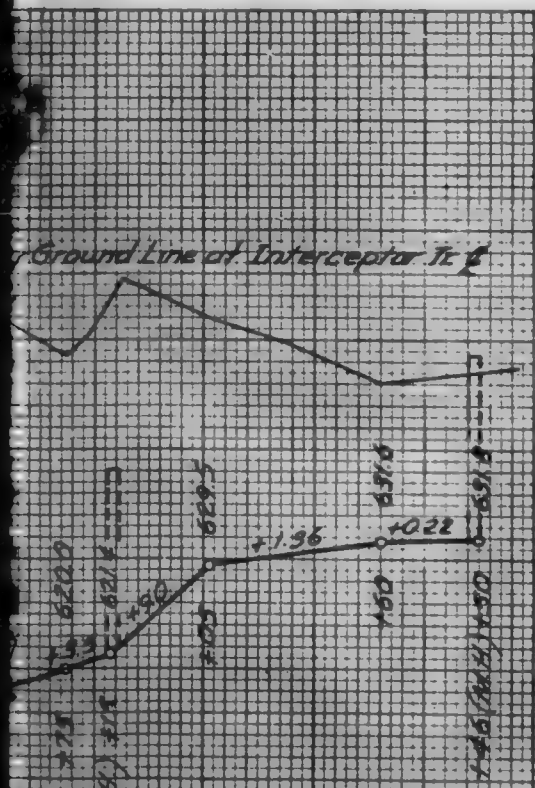


("SC" LINE) ℄ INTERCEPTOR TRENCH

E.W.O. # 3 - Work Completed.
The existing pipes collapsed under slide forces were removed and replaced with annular, corrugated, elliptical C.M.P. 30" - 8 gauge, 18" - 12 gauge.

P.A. # 1 - Place rock embankment material on embankment slope.

S.F.O. # 2 - Resurface sunken roadway with Asphaltic Concrete.



RCEPTOR TRENCH

"SC" 20

Form E-378 (Rev. 10-66)

27-1121
7285

OREGON STATE HIGHWAY DEPARTMENT

Expected Overrun of Project Authorization

Project Murphy Hill Date September 19, 1969

Highway Salmon River Contract No. 7285

County Polk Kind of Work Slide Correction Contractor Slate & Hall

	Authorized	Estimated
Contract Amount	$ 117,400.00	$ 118,725.00
Anticipated Items	8,100.00	9,500.00
Contingency (4½%)	5,647.50	26,985.00
Engineering	11,295.00	13,300.00
Credits		
PROJECT COST	$ 142,442.50	$ 168,510.00
NET INCREASE $		26,067.50 or 18.3%

MAJOR OVERRUNS AND UNDERRUNS (Describe Briefly)

(Indicate whether contract (C), anticipated (A), or unanticipated (U).
(List all unanticipated items)

	Expected Amount	Net Change
(C) Item 4 Rock Excavation	$ 35,000.00	+ $ 1,325.00
(A) E.W.O. 1 Flagging	2,000.00	+ 900.00
(A) E.W.O. 2 Clear Exc. - Rd. Area	7,000.00	+ 900.00
(U) E.W.O. 3 Remove Corrugd Pipe - replace with heavier gage	16,000.00	
(U) E.W.O. 1 Leveling and Blinding	900.00	+ $ 26,985.00
(U) E.W.O. 2 Reworking Lumber Bidding	4,200.00	
(U) P.A. 1 Rock on Embankment Slope	3,985.00	

APPROVED BY
STATE HIGHWAY COMMISSION
DATE 11-18-69

Principal reasons for overruns (Continue on reverse side): Slide forces collapsed the existing 18" & 36" C.M.P. necessitating removal and replacement for a distance of 160' beyond the 100' removal anticipated under the contract. Steepness of the residual requires pervious reworking and placement of rock on the embankment slope.

INSTRUCTIONS: A report on this form is to be submitted if and when it becomes evident that the project cost will exceed the original project authorization by more than five per cent and again if and when it becomes evident that the project cost will exceed by more than five per cent a subsequently approved increased project authorization. Submit five copies to Salem. After having been noted by the Deputy or Assistant State Highway Engineer, one copy will be sent to the Division Engineer and one copy to the Resident Engineer.

Submitted by Arthur Duffy
Resident Engineer

Noted by _____
Construction or Bridge Engineer

Confirmed by _____
Division Engineer

Noted by _____
Deputy or State Highway Engineer

SP*2576B-704

RECEIVED
JUL 17 1969
FOR FILING

27-1121

7285

July 16, 1969

Slate-Hall
7635 S.W. 40th Avenue
Portland, Oregon 97219

Gentlemen:

We enclose for your files a fully executed copy of the following described contract which was awarded to you by the State Highway Commission:

Contract No. 7285 for slide correction on the Murphy Hill Section of the Salmon River Highway in Polk County.

A copy of this contract is also being sent to the surety on your performance bond.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

Enclosure

cc: Great American Insurance Company
Wells-Reed-Wood-West Co.
Seaboard Surety Company
D. J. Barbee
F. D. Morgan
I. D. Merchant
R. D. Asburry
Arthur Duffy

RECEIVED
SEP 26 1969
FOR FILING

27-1121

7285

July 8, 1969

Slate-Hall
7825 S.W. 40th Avenue
Portland, Oregon 97219

Gentlemen:

The State Highway Commission on July 3, 1969, accepted your proposal for slide correction on the Murphy Hill section of Salmon River Highway in Polk County for the sum of $117,400.00 and referred it to the State Highway Engineer with authority to award the contract when necessary right-of-way is acquired.

Clearance has been received and the State Highway Engineer today awarded you the project, which has been assigned Contract No. 7285.

Contract forms are being prepared and will be mailed to you for execution.

Very truly yours,

Floyd Avery, Secretary
OREGON STATE HIGHWAY COMMISSION

cr

bc: Frank Morgan
D. J. Barbee
I. D. Merchant
William Geibel (SAIF)
Pacific Builder & Engineer, Inc., Seattle, Wash.
Daily Journal of Commerce, Seattle, Wash.
Daily Journal of Commerce, Portland, Oregon

RECEIVED
MAY 28 1969
FOR FILE
27-1121
7285

May 27, 1969

Oregon State Highway Commission

Gentlemen:

A slide has developed at Murphy Hill, M.P. 17.13, on the Salmon River Highway. It is proposed to construct a ground-water interception system in an attempt to stabilize the slide. The preliminary estimate for the cost of the work is $150,000.

It is recommended that funds be added to the existing State Construction Program to cover the cost of doing the work. If approved, we can let a contract for the work on June 26.

This matter will be an HOA item for your consideration at the May 28 meeting and your approval is recommended.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Query
R. L. Porter
F. B. Klaboe
Victor D. Wolfe
D. J. Barbee
L. H. Young
V. E. Skoog
F. D. Morgan
E. D. Asburry

FBK:srb sr

RECEIVED
MAY 28 1969

27-1121
7285

Salem, Oregon 97310
May 27, 1969

Mr. U. J. Barbee
Design Engineer
BUILDING

I am enclosing pertinent information on the Murphy Hill slide. The project will be financed in the amount of $150,000 on the existing State Construction Program.

The estimate contained with this information was only for $77,238. This estimate envisioned that the trench would be backfill with excavation material except a four-foot slab along one side would be pervious material.

Your instructions are to work up the project for letting on June 26, 1969, using pervious granular material for the entire backfill of the trench areas.

F. B. Klaboe
Assistant State Highway Engineer

FBK:srb

File Attached

cc: L. H. Young
F. D. Morgan

FORM G-30 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
May 26, 1969

SUBJECT: Murphy Hill Slide
Salmon River Highway

To: Mr. Tom Edwards
ASST. STATE HIGHWAY ENGINEER

D E P A R T M E N T

Considerable exploratory drilling has been done at the subject location. This drilling shows the main flow of underground waters causing the settlement can be intercepted at a high level where the depth is not so great. This plan also has the advantage that providing outfall for this drainage is simple and positive.

Survey data for this plan is submitted herewith. It consists of the items listed in Ross Harris' attached May 22 letter. Special Provisions will be submitted direct to the Design Engineer as soon as they are prepared.

It is recommended this corrective work be contracted at an early date. The slide shouldn't be left without correction for any extended period of time as further movement could sever some of the existing underground pipes letting more water accelerate the movement.

No additional right of way will be required.

R. D. Asburry
DIVISION ENGINEER

by

Gerald Wimer
ASST. DIVISION ENGINEER

GWW:sjs
Attach.
cc: E. S. Hunter
D. J. Barbee
F. D. Morgan

file to Barbee
5-27-69

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

May 22, 1969
Salem, Oregon

To: Mr. R. D. Asburry
Division Engineer
Salem, Oregon

SUBJECT: Letter of Transmittal
Murphy Hill Section
Slide Prevention
Salmon River Highway
Polk County
Prefix No. 27-1114

Herewith please find the following data for drain ditch work on subject section:

1 Book	Field Notes
1 Pad	Misc. Computations
1 Roll	Clearing & Grubbing Chart
1 Roll	Profile & Cross Sections
1 Sheet	Drill Hole Map
1 Sheet	Detail Map
2 Copies	Field Report on Material Source
2 Copies	Locating Engineer's Statement
2 Copies	Narrative Report
2 Copies	Estimate of Cost & Item Summary

Ross M. Harris
Resident Engineer

334-1717 North Plains (Commercial Ave.) 1969
Section (Grading & Paving)
#7287

CA17 3668

Contract #7287 is rejected-- to come up on next bid letting.

SEE: Contract #7384

RECEIVED
JUL 29 1969
FOR FILING

334-1717

7281

July 29, 1969

Cascade Construction Co., Inc.
Ft. of S.W. Abernethy Street
Portland, Oregon 97201

Gentlemen:

On July 3, we wrote to you that the Commission had accepted your bid for grading and paving in North Plains subject to approval by the City of North Plains and the payment of $31,090.00 by the City.

We now have a letter from the City of North Plains stating that they cannot accept the contract, our number 7287, and that they cannot make the required deposit. Under these conditions, we regret to advise that the Commission has no alternative other than to reject all bids for this project.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

FQ:sj

cc R. L. Porter
F. B. Klaboe
F. D. Morgan
D. J. Barbee
I. D. Merchant
L. H. Young
H. S. Cox
W. W. Geibel (SAIF)
L. W. Rulien
Lowell Johnston

RECEIVED
JUL 29 1969
FOR FILING

334-1717

7287

July 29, 1969

Cascade Construction Co., Inc.
Ft. of S.W. Abernethy Street
Portland, Oregon 97201

Gentlemen:

On July 3, we wrote to you that the Commission had accepted your bid for grading and paving in North Plains subject to approval by the City of North Plains and the payment of $31,090.00 by the City.

We now have a letter from the City of North Plains stating that they cannot accept the contract, our number 7287, and that they cannot make the required deposit. Under these conditions, we regret to advise that the Commission has no alternative other than to reject all bids for this project.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

FQ:sj

cc R. L. Porter
F. B. Klaboe
F. D. Morgan
D. J. Barbee
I. D. Merchant
L. H. Young
H. S. Cox
W. W. Geibel (SAIF)
L. W. Rulien
Lowell Johnston

336-1724 Newberg (S. River Street) Sec. 1969
(Grading and paving)

#7288

OREGON STATE HIGHWAY DEPARTMENT

A-150 (3-64)

HIGHWAY DEPARTMENT INVOICE

NO. 100994

6 copies

RECEIVED
JAN 19 1970
ENGINEER
COUNTY & CITY DIVISION

DATE	BILLING REQ. NO.	YOUR ORDER NO.	CREDIT DISTRIBUTION
1-16-70	CC 1206		336-1121-295 $1,179.32 336-1724-295 $70, 131.82

City of Newberg
412 East First Street
Newberg, Oregon 97132

MAKE CHECKS PAYABLE TO
THE OREGON STATE HIGHWAY DEPARTMENT

SEND REMITTANCE TO:
OREGON STATE HIGHWAY DEPARTMENT
STATE HIGHWAY BUILDING
SALEM, OREGON 97310

DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
Attention: M.C. Gilbert, City Recorder			
Final Billing: Special City Allotment project on South River Street. Contract No. 7988. Covered by Agreement dated February 6, 1969.			
City's Advance Deposit			$1,660.00
As per attached statement:			
Final Cost		$6,311.14	
Agreed State Share		75,000.00	
City's agreed share			$1,311.14
Refund due City			348.86

ACKNOWLEDGE RECEIPT OF BILLING REQUEST

C
By

NOTED
H. S. COX
NOTED
R. H. PRANGE

Noted
Oscar H. Norberg

NOTED
P. B. Arensmeier
NOTED
RICHARD UNREIN

NOTED
[illegible]

NOTED
HAROLD REYNOLDSON
NOTED
DON HARWELL

OREGON STATE HIGHWAY DEPARTMENT

Form A-101—(7-68)
EP*F204

Request for Outside Billing

(Or Advice of Cash Transaction)

Address invoice to: City of Newberg
412 E. First Street
Newberg, Oregon 97132
Attention of Mr. M. C. Gilbert, City Recorder

Request No. (assigned by staff engineer or head of division) CC 1206
Date January 16, 1970
Payer's Order No. (if any)
Department Order No. (if any) (Number of "Order to Render Service")

Description and Authority: (Describe the service rendered, stating kind of service, location, etc. Also refer to agreements, letters and orders by which payer authorized the service.)

Final Billing: Special City Allotment project on South River Street
Contract No. 7288
Covered by Agreement dated 2-6-69

3 Copies

Itemized Statement:

Quantity	Unit	Description	Unit Price	Amount
		City's advance deposit		21,660.00
		As per attached statement		
		Final Cost	$46,311.14	
		Agreed State Share	25,000.00	
		City's agreed share		$21,311.14
		Refund due City		348.86

If payer has made payment for this service, indicate the amount of payment. $

If payer has made a deposit with the Department to guarantee payment, indicate the amount of the deposit. $21,660.00

Is this a partial or final request for billing? Final

If there have been any previous requests for billing in connection with this same service, indicate the total amount of all previous requests. $

Give the number of the last previous request in connection with this same service.

Credit distribution:
336-1424-295 1179.32
336-1724-295 20,131.82

Submitted by:

Approved:
Division Engineer

Approved:
Department Head or Staff Engineer

Instructions: The original and duplicate copies shall be forwarded through the division engineer to the staff engineer or division head. Staff engineer or division head will forward original copy to the Accounting Division. Additional copies may be prepared for and retained by the division office and other field offices concerned. If the request is to be accompanied by a payment, an additional copy shall be submitted for the use of the Accounting Division.

Date January 16, 1970

OREGON STATE HIGHWAY DEPARTMENT

ITEMIZED STATEMENT OF COSTS
SPECIAL CITY ALLOTMENT PROJECT

Program Year 1969

Contract # 7288 Prefix 136-1724 Survey Prefix 136-1424

Street South River Street

City Newberg

Payments to Contractor (see attached voucher)		$ 18,645.11
Engineering and Contingencies		6,486.69
*Survey: Total $ 1,464.50 Prorated Share		1,179.32
TOTAL		46,311.14
Agreed State Share		25,000.00
Agreed City Share		21,311.14
City Advance Deposit		21,660.00
Refund Due City		348.86

Reference: Outside Billing cc 1206

*$\frac{\text{Construction Costs over \$25,000.00} = 20,131.82 \times 2,643.82}{\text{Construction Costs} = 45,13182} = \$1,179.32$

Portion of Preliminary Engineering Charged to Project = $1,179.32

RU

ON STATE HIGHWAY DEPARTMENT

NTRACT PAYMENT VOUCHER

(REV. 6-63)

COUNTY	CONTRACT NO.	ESTIMATE NO.
YAMHILL	7288	5 Pa
HIGHWAY	**FEDERAL AID PROJECT NO.**	
CITY STREET		
SECTION		
NEWBERG /S RIVER ST/		

ITEMS	UNITS	UNIT PRICE	QUANTITY TO DATE
9N GENERAL EXCAVATION	LUMP SUM	5[illegible].0000	100.0
9N STONE BASE-6 IN THICK	SQ YDS	.6000	5,558.3
9N CEMENT TREATED BASE- 8 INCHES THICK	SQ YDS	3.5000	3,381.0
9N CLASS B ASPHALT CONCRETE-4 INCHES THICK	SQ YDS	2.1000	4,491.2
9N 12-INCH SEWER PIPE	LIN FT	5.0000	134.5
9N CONCRETE MANHOLES	ONLY	300.0000	1.0
9N CONCRETE INLETS TYPE CG-1	ONLY	150.0000	4.0
9N CONCRETE CURB TYPE A MOD	LIN FT	2.0000	1,455.7
9N CONCRETE CURB TYPE C	LIN FT	2.0000	42.5
9N CONCRETE DRIVEWAYS	SQ YDS	9.0000	49.2
9N CONCRETE WALKS	SQ YDS	8.0000	93.2
PRICE AGREEMENT ITEMS			
9N FURN & PL 6IN CONC SEWER PIPE	LIN FT	2.0000	75.0
ADJUSTMENT ITEMS			
9N LIQUIDATED DAMAGES	DAY	50.0000-	6.0
9N LIQU DAM TIME EXT. COMM ACT 11-18-65		50.0000	6.0
FORCE ACCOUNT ITEMS			
9N FLAGGING (94001)			
9N SALVAGE & REINSTALL ST SIGNS (94002)			

TOTAL CONTRACT ITEMS

11/25/6[illegible] PG. 1 7288

VOUCHER NO. ------

-----% RETAINED ON CONTRACT ITEMS

CP/mt

FORCE ACCOUNT

R AUDITOR Lowell Johnson

TOTAL PAYMENTS

	CONTRACT NO.	ESTIMATE NO.	PREFIX NO'S.
	[illegible]	3 Post Final	336 1724 203 (640) 300.00 Dr.
	FEDERAL AID PROJECT NO.		
. 517			

UNITS	UNIT PRICE	QUANTITY TO DATE	AMOUNT TO DATE	PREVIOUS AMOUNT	PRESENT AMOUNT
UMP SUM	5[illegible]0.0000	100.000	5000.00	5000.00	
0 YDS	.8000	5,558.340	4446.67	4446.67	
0 YDS	3.5000	3,801.070	13303.75	13303.75	
0 YDS	2.1000	4,491.250	9431.63	9431.63	
IN FT	5.0000	134.550	672.50	672.50	
NLY	300.0000	1.000	300.00	300.00	
NLY	150.0000	4.000	600.00	600.00	
IN FT	2.0000	1,455.210	2910.42	2910.42	
IN FT	2.0000	42.500	85.00	85.00	
SQ YDS	9.0000	49.200	442.80	442.80	
SQ YDS	8.0000	93.260	746.08	746.08	
LIN FT	2.0000	75.000	150.00	150.00	
DAY	50.0000- 40.0000	6.000 6.000	300.00- 300.00	300.00-	300.00
			42.52	42.52	
			233.78	233.78	
TOTAL CONTRACT ITEMS			38,368.83 [illegible]	[illegible]	[illegible]
-----% RETAINED ON CONTRACT ITEMS					
FORCE ACCOUNT			276.30 276.30	[illegible]	
TOTAL PAYMENTS			38,645.13	38,345.13	300.00

ON STATE HIGHWAY DEPARTMENT

NTRACT PAYMENT VOUCHER

COUNTY: YAMHILL

CONTRACT NO.: 7200

ESTIMATE NO.: 5 Post F

HIGHWAY: CITY STREET

FEDERAL AID PROJECT NO.:

SECTION: NEWBERG /S RIVER ST/

(REV. 6-63)

ITEMS	UNITS	UNIT PRICE	QUANTITY TO DATE
9N CLEARING AND GRUBBING	LUMP SUM	5[illegible] 0.0000	1[illegible].000
9N STONE BASE-6 IN THICK	SQ YDS	.6000	5,558.340
9N CEMENT TREATED BASE- 8 INCHES THICK	SQ YDS	3.5000	3,301.070
9N CLASS C ASPHALT CONCRETE-4 INCHES THICK	SQ YDS	2.1000	4,491.250
9N 12-INCH STEEL PIPE	LIN FT	5.0000	134.500
9N CONCRETE MANHOLES	ONLY	2[illegible].0000	1.000
9N CONCRETE INLETS TYPE CG-1	ONLY	150.0000	4.000
9N CONCRETE CURB TYPE A MOD	LIN FT	2.0000	1,455.250
9N CONCRETE CURB TYPE L	LIN FT	2.00[illegible]	42.500
9N CONCRETE DRIVEWAYS	SQ YDS	9.0000	49.200
9N CONCRETE WALKS	SQ YDS	8.0000	93.260
PRICE AGREEMENT ITEMS			
9N FURN & PL 48IN CONC SEWER PIPE	LIN FT	2.0000	75.000
ADJUSTMENT ITEMS			
9N LIQUIDATED DAMAGES	DAY	50.0000-	8.000
9N LIQUIDATED DAMAGES, CLAIM ACT 11-18-69		50.0000	8.000
FORCE ACCOUNT ITEMS			
9N FLAGGING (94001)			
9N SALVAGE & REINSTALL ST SIGNS (94002)			

TOTAL CONTRACT ITEMS

-----% RETAINED ON CONTRACT ITEMS

FORCE ACCOUNT

TOTAL PAYMENTS

11/25/[illegible] 20.[illegible] 7233

VOUCHER NO. ------

CP/mt

R AUDITOR Lowell Johnston

	CONTRACT NO.	ESTIMATE NO.	PREFIX NO'S.	
	7248	5 Post Final	336 1724 203 (640)	300.00 Dr.
	FEDERAL AID PROJECT NO.			

	UNIT PRICE	QUANTITY TO DATE	AMOUNT TO DATE	PREVIOUS AMOUNT	PRESENT AMOUNT
·011	[illegible]	100.000·	[illegible]	[illegible]	
	.60[illegible]	5,558.340·	4440.67	[illegible].67	
	3.50[illegible]	3,021.570·	10[illegible].7[illegible]	[illegible]3.75	
	2.10[illegible]	4,441.250·	9411.63	1.6[illegible]	
	5.01[illegible]	134.500·	672.50	[illegible]2.5[illegible]	
	[illegible].00[illegible]	1.000·	30[illegible].3[illegible]	[illegible].[illegible]	
	5[illegible].00[illegible]	4.000·	[illegible].00	[illegible].0[illegible]	
	15[illegible].00[illegible]	[illegible]	[illegible]	[illegible].[illegible]	
T	2.0[illegible]	1,455.2[illegible]·	91[illegible].[illegible]	[illegible].[illegible]	
	2.0[illegible]	42.500·	85.00	[illegible].[illegible]	
	9.00[illegible]	49.200·	492.30	[illegible].[illegible]	
	8.00[illegible]	93.250·	746.03	[illegible].[illegible]	
T	2.00[illegible]	75.000·	150.[illegible]	[illegible].[illegible]	
	50.000[illegible]	[illegible].000·	3[illegible].[illegible]	[illegible].[illegible]	300.00
	50.000[illegible]	[illegible].000·	3[illegible].[illegible]		
			[illegible]2.52	[illegible]2.52	
			2[illegible].78	[illegible].78	

RECEIVED
NOV 28 1969
FOR FILING

336-1724
7288

November 28, 1969

United Pacific Insurance Co.
Fidelity & Surety Department
P. O. Box 1216
Tacoma, Washington 98401

Gentlemen:

A post-final payment for $300 will be made to Rowell & Wickersham on Contract No. 7288 for grading and paving S. River Street in Newberg in Yamhill County as soon as the warrant is prepared.

The total amount paid on this contract will be $38,645.13 including the post-final payment. Of the total, $276.30 is for force account.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

ej

cc Rowell & Wickersham
P. O. Box 472
McMinnville, Oregon 97128

bc Frank Morgan
Ivan Merchant
V. E. Skoog
Attn: John Herr
R. D. Asburry

RECEIVED
DEC 24 1969
FOR FILING

336-1724
7288

Agenda 39
II 1
11-18-69

November 26, 1969

Rowell and Wickersham
P. O. Box 472
McMinnville, Oregon 97128

Gentlemen:

The State Highway Commission at its meeting on November 18, 1969, granted your request for a six-day extension on Contract No. 7288 for grading and paving South River Street in Newberg in Yamhill County. This extension will eliminate all liquidated damages.

Very truly yours,

Floyd Cuery, Secretary
OREGON STATE HIGHWAY COMMISSION

By
C. W. Head, Assistant Secretary

sj
cc F. D. Morgan
V. E. Skoog
L. W. Rullen
Lowell Johnston

FORM B-90 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
October 8, 1969

SUBJECT: South River Street (Newberg) Section
Contract No. 7288
Time Extension

To:
Mr. F. B. Klaboe
Assistant State Highway Engineer
BUILDING

Rowell and Wickersham, contractors on the subject project, request a 6-day time extension because of delays from utility adjustments. Bids on this project were opened June 26 and the workday count started July 22 with 50 calendar workdays allowed.

The three utilities involved (Portland General Electric, General Telephone and Northwest Natural Gas) were not completely relocated until August 7, or 17 days after the time count started which represents about one-third of the time allowed.

This was a three-block widening project involving removal of existing curbs and construction of a new wider curbed section with some added drainage. There were utility facilities present throughout the length of the project and it was the City's obligation to arrange for the utility adjustments.

In view of the relatively short time allowed for completion of the project, we believe the request should be granted. The project was completed on September 15 with 56 days elapsed, so approval of a 6-day extension will eliminate all liquidated damages which amount to $300. This is a State project.

A rough draft of a letter to the Highway Commission is attached.

F. D. Morgan
Construction Engineer

By John A. Bond
John A. Bond
Construction Administration Engineer

JAB :fw
Enc.
cc V. L. Gallagher

RECEIVED
OCT 10 1969
OFFICE OF
STATE HIGHWAY ENGINEER

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7288 Contractor Rowell & Wickersham

Highway City Street

Section Newberg (S. River Street)

Kind of Work Grading & Paving

It is recommended that the request for increase in the number of workdays within which to complete said contract be ~~DENIED~~ or GRANTED. The reasons for such recommendation are as follows:

Recommend 6 days for utility adjustments.

Recommended for Approval:

Division Engineer

for Construction Engineer or Bridge Engineer

Assistant State Highway Engineer

Contract No.	7288
Project designation	State 336-1724 (State-Federal)
Date awarded	July 3, 1969
Work started	July 28, 1969
Per cent completed	100% 9-15-69 (Date)
No. of Workdays Allowed	50
No. of Workdays Used	56
No. of Added Workdays Requested	6

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon 97310

Date July 15, **19** 69

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 50 **days to** 56 **days, within which to complete our Contract No.** 7288, **without the assessment of liquidated damages. The said contract is described as follows:**

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows: Gentlemen;
Due To Circumstances beyond our control, We were unable to complete our contract No. 7288. Our was delayed one week as we were waiting for the utilities to be put in by. City of Newberg water & Light Dept. The natural Gas Company & Portland General Electric Company. We would be very much obliged if you would extend our Contract No. 7288 6 Additional Days

Respectfully submitted,

Rowell & Wickersham
Contractor

By Glenn L. Rowell Partner

CONSENT OF SURETY

Date September 16, **1969**

We, UNITED PACIFIC INSURANCE COMPANY,
Tacoma, Washington
, as

surety on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

Grace Odegaard
Attorney-in-fact

(SEAL)

Merrill Hagan
Resident Agent

HAGAN-HAMILTON INSURANCE
McMinnville, Oregon

OREGON STATE HIGHWAY DEPARTMENT 11/25/69 PROGRESS ESTIMAT

SECTION NEWBERG /S RIVER ST. COUNTY YAMHILL AWARDED 07

HIGHWAY CITY STREET SPECIFIED COMPLETION A) 50 CWD B) C) EXTENSION 6 C

TYPE WORK GRADING AND PAVING CONTRACTOR ROWELL AND NICKERSHAM MCMINNVILLE

ITEM NO.	ITEM NAME / UNIT	UNIT PRICE	ORIGINAL AUTHORIZATION QUANTITY	ORIGINAL AUTHORIZATION AMOUNT	CORRECTED ESTIMATE QUANTITY	CORRECTED ESTIMATE AMOUNT
001	GENERAL EXCAVATION LUMP SUM	5000000	100000	500000	100000	500000
002	STONE BASE-6 IN THICK SQ YDS	0800	4660000	372800	5558340	444667
003	CEMENT TREATED BASE- 8 INCHES THICK SQ YDS	35000	4260000	1491000	3881070	1358375
004	CLASS B ASPHALT CONCRETE- 4 INCHES THICK SQ YDS	21000	4610000	968100	4491250	943163
005	12-INCH SEWER PIPE LIN FT	50000	150000	75000	134500	67250
006	CONCRETE MANHOLES ONLY	3000000	1000	30000	1000	30000
007	CONCRETE INLETS TYPE CG-1 ONLY	1500000	4000	60000	4000	60000
008	CONCRETE CURB TYPE A MOD LIN FT	20000	1490000	298000	1455200	291040
009	CONCRETE CURB TYPE C LIN FT	20000	90000	18000	42500	8500
010	CONCRETE DRIVEWAYS SQ YDS	90000	90000	81000	49200	44280
011	CONCRETE WALKS SQ YDS	80000	50000	40000	93260	74608

PROGRESS ESTIMATE AND COST REPORT

PAGE NO. 01 FORM E-19c

AWARDED 07 03 69 F.A.P. CONTRACT NO. 7288 WORK DONE TO:

CWD EXTENSION 6 CWD APPROVED A) 11-18-69 PREFIX 336 1724 ESTIMATED DATE OF COMPLETION:

USED B) 56 CWD ESTIMATE NO. 005

D NICKERSHAN C) POST FINAL

LE

CORRECTED ESTIMATE		PERFORMED TO DATE 09/15/69		TO COMPLETE 09/15/69		GROUP PORN	NEW TOTAL TO DATE	
UANTITY	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT		QUANTITY	AMOUNT
100000	500000	100000	500000			9N		
5558340	444667	5558340	444667			9N		
3881070	1358375	3881070	1358375			9N		
4491250	943163	4491250	943163			9N		
134500	67250	134500	67250			9N		
1000	30000	1000	30000			9N		
4000	60000	4000	60000			9N		
1455200	291040	1455200	291040			9N		
42500	8500	42500	8500			9N		
49200	44280	49200	44280			9N		
93260	74608	93260	74608			9N		

OREGON STATE HIGHWAY DEPARTMENT 11/25/69 PROGRESS ESTIMAT

SECTION NEWBERG /S RIVER ST.
HIGHWAY CITY STREET
TYPE WORK GRADING AND PAVING

COUNTY YAMHILL
SPECIFIED COMPLETION A) 50 CWD B) C)
CONTRACTOR ROWELL AND HICKERSHAM MCMINNVILLE

AWARDED 07
EXTENSION 6 CW

ITEM NO.	ITEM NAME / UNIT	UNIT PRICE	ORIGINAL AUTHORIZATION QUANTITY	ORIGINAL AUTHORIZATION AMOUNT	CORRECTED ESTIMATE QUANTITY	CORRECTED ESTIMATE AMOUNT
	TOTALS FOR ORIG. CONTRACT			3933900		3821883
	PRICE AGREEMENTS					
30101	FURN & PL 6IN CONC SEWER PIPE LIN FT	20000			75000	15000
	ADJUSTMENTS					
6001	LIQUIDATED DAMAGES DAY	-500000			6000	-30000
6001A	LIQU DAM TIME EXT. COMM ACT 11-18-69	500000			6000	30000
	FORCE ACCOUNTS					
801	FLAGGING (94001)					4252
802	SALVAGE & REINSTALL ST SIGNS (94002)					23378
	* TOTAL PAY COSTS			3933900		3864513
	ADD. ANTICIP. ITEMS					
94001	FLAGGING (EWL)			10000		

PROGRESS ESTIMATE AND COST REPORT

PAGE NO. 02 FORM E-498 (REV. 9-68)

CWD

AWARDED 07 03 69 F.A.P. CONTRACT NO. 7288 WORK DONE TO:

EXTENSION 6 CWD APPROVED A) 11-18-69 PREFIX 336 1724

56 CWD

ND NICKERSHAM LE USED B) ESTIMATE NO. 005 ESTIMATED DATE OF COMPLETION:

C) POST FINAL

CORRECTED ESTIMATE		PERFORMED TO DATE 09/15/69		TO COMPLETE 09/15/69		GROUP PORN	NEW TOTAL TO DATE	
QUANTITY	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT		QUANTITY	AMOUNT
	3821883		3821883					
75000	15000	75000	15000			9N		
6000	-30000	6000	-30000			9N		
6000	30000	6000	30000			9N		
	4252		4252			9N		
	23378		23378			9N		
	3864513		3864513					
						9N		

OREGON STATE HIGHWAY DEPARTMENT 11/25/69 PROGRESS ESTIMA

SECTION NEWBERG /S RIVER ST.
COUNTY HILL
AWARDED 07-

HIGHWAY CITY STREET
SPECIFIED COMPLETION A) 30 CWD B) C)
EXTENSION 6 C

TYPE WORK GRADING AND PAVING
CONTRACTOR ROWELL AND HICKERSHAM MCMINNVILLE

ITEM NO.	ITEM NAME / UNIT	UNIT PRICE	ORIGINAL AUTHORIZATION QUANTITY	ORIGINAL AUTHORIZATION AMOUNT	CORRECTED ESTIMATE QUANTITY	CORRECTED ESTIMATE AMOUNT
94002	SALV & REINST STREET SIGNS (EM21)			30000		
98999	CONTINGENCIES			178825		
99999	ENGINEERING			397390		635487
	GRAND TOTALS			4550115		4500000

RESIDENT ENGINEER DATE DI

ROGRESS ESTIMATE AND COST REPORT

PAGE NO. 03 FORM E-498 (REV 5-69)

CWD

AWARDED 07 03 69 F.A.P. CONTRACT NO. 7288 WORK DONE TO:

EXTENSION 6 CWD APPROVED A) 11-18-69 PREFIX 336 1724

56 CWD

WICKERSHAM USED B) ESTIMATED DATE

C) ESTIMATE NO. 005 OF COMPLETION.

POST FINAL

ORRECTED ESTIMATE		PERFORMED TO DATE 09/15/69		TO COMPLETE 09/15/69		GROUP P OR N	NEW TOTAL TO DATE	
ANTITY	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT		QUANTITY	AMOUNT
						9N		
	635487		633301		2186			
4500000			4497814		2186			

TE DIVISION ENGINEER

RECEIVED
NOV 6 - 1969
FOR FILING

336-1724
7288

November 6, 1969

United Pacific Insurance Co.
Fidelity & Surety Department
P. O. Box 1216
Tacoma, Washington 98401

Gentlemen:

Contract No. 7288 awarded to Rowell & Wickersham for grading and paving S. River Street in Newberg in Yamhill County was completed on September 15, 1969, and accepted by the Highway Commission on November 5, 1969.

Final payment in the amount of $1,966.95 will be released to the contractor after November 13, 1969. The total contract amount is $38,345.13 including $276.30 for work performed under force account.

No claims for labor or material have been filed with us.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

aj

cc Rowell & Wickersham
P. O. Box 472
McMinnville, Oregon 97128

bc Frank Morgan
Ivan Merchant
V. E. Skoog
Attn: John Herr
L. W. Rulien

RECEIVED
NOV 5 - 1969
FOR FILING

336-1724
7288

November 5, 1969

Oregon State Highway Commission

Gentlemen:

Work was completed September 15, 1969, on Contract No. 7238. The contract was with Rowell and Wickersham and was for grading and paving on the Newberg (South River Street) Section in Yamhill County.

As the contractor has completed all work according to specifications, I recommend that you accept the project effective November 5, 1969, and that you concur in this procedure at the Commission meeting on November 18.

It is assumed that if you have no objections to this action and you do not advise me to the contrary, I may consider the matter has your approval.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Quary
R. L. Porter
F. B. Klaboe
V. D. Wolfe
V. E. Skoog
F. D. Morgan
L. H. Young
R. D. Asburry

srb sr

RECEIVED
OCT 14 1969

336-1724
7281

October 13, 1969

Oregon State Highway Commission

Gentlemen:

Request for Extension of Time
No. 1
November 18, 1969 meeting

Rowell and Wicherham, contractors on the South River Street (Newberg) project in Yamhill County, Contract No. 7281, request a six-day extension of the contract time. Delay in relocating utilities is cited as the reason.

This is a Special City Allotment project and the City was responsible for the arrangements for adjustment of the three utilities involved. Approximately one-third of the contract time allowed elapsed before the utility relocations were completed. This delayed some of the contractor's operations and justifies the time extension requested.

The project was completed on September 15 with six days liquidated damages time accrued. I recommend a six-day extension which will eliminate all liquidated damages.

This matter will be on the agenda for your consideration at the November 18 meeting.

Very truly yours,

Forrest Cooper
State Highway Engineer

cc: Floyd Query
R. L. Porter
F. B. Klaboe
V. D. Wolfe
F. D. Morgan
V. E. Skoog
L. W. Rulien

JAB:fw sr

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7128 Contractor Powell & Richardson

Highway City Street

Section Newberg (So River Street)

Kind of Work Grading & Paving

It is recommended that the request for increase in the number of workdays within which to complete said contract be DENIED or GRANTED. The reasons for such recommendation are as follows:

Recommend 4 days for utility adjustments.

Recommended for Approval:

Division Engineer

Construction Engineer or Bridge Engineer

State Highway Engineer

Contract No.	7128
Project designation	[illegible] State-Federal
Date awarded	July 5, 1960
Work started	July 11, 1960
Per cent completed	100% 9-15-60 Date
No. of Workdays Allowed	70
No. of Workdays Used	66
No. of Added Workdays Requested	4

B-380 (Rev.)—SM—9-64

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon 97310

Date ...July 15....., 1969

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from .90..... days to .....56..... days, within which to complete our Contract No. .....7288....., without the assessment of liquidated damages. The said contract is described as follows:

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows: Gentlemen:

Due to circumstances beyond our control we were unable to complete our contract No. 7288. Our work was delayed one week as we were waiting for the utilities to be put in by. The City of Newberg water & light department, The Natural gas company & Portland General Electric Company. We would be very much obliged if you would extend our Contract No. 7288-6- Additional Days

Respectfully submitted,

.....Rowell & Wickersham.....
Contractor

By Glen L Rowell Partner

CONSENT OF SURETY

Date ....September 16....., 19 69

We, ...UNITED PACIFIC INSURANCE COMPANY,....
Tacoma, Washington
....., as

surety on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

Grace Olinger
Attorney-in-fact

(SEAL)

Merrill Hagan
Resident Agent

HAGAN-HAMILTON INSURANCE
McMinnville, Oregon

FORM E-90 (12-67)

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon

October 8, 1969

SUBJECT: South River Street (Newberg) Section
Contract No. 7288
Time Extension

To:
Mr. F. B. Klaboe
Assistant State Highway Engineer
BUILDING

Rowell and Wickersham, contractors on the subject project, request a 6-day time extension because of delays from utility adjustments. Bids on this project were opened June 26 and the workday count started July 22 with 50 calendar workdays allowed.

The three utilities involved (Portland General Electric, General Telephone and Northwest Natural Gas) were not completely relocated until August 7, or 17 days after the time count started which represents about one-third of the time allowed.

This was a three-block widening project involving removal of existing curbs and construction of a new wider curbed section with some added drainage. There were utility facilities present throughout the length of the project and it was the City's obligation to arrange for the utility adjustments.

In view of the relatively short time allowed for completion of the project, we believe the request should be granted. The project was completed on September 15 with 56 days elapsed, so approval of a 6-day extension will eliminate all liquidated damages which amount to $300. This is a State project.

A rough draft of a letter to the Highway Commission is attached.

F. D. Morgan
Construction Engineer

By John A. Bond

John A. Bond
Construction Administration Engineer

JAB :fw
Enc.
cc V. L. Gallagher

RECEIVED
OCT 10 1969
OFFICE OF

336-1724
7288

FORM E-1 (REV. 12-64)

OREGON STATE HIGHWAY DEPARTMENT

FIELD ENGINEER'S WEEKLY REPORT

FOR CONSTRUCTION PROJECTS ONLY
CONSTRUCTION AND BRIDGE DIVISIONS

SECTION: Newberg (S. River St.)	WEEK ENDING: Sept. 26, 1969	
	SECTION PREFIX: 336-1724	
HIGHWAY: City Street	COUNTY: Yamhill	
NAME OF JOB: Newberg (S. River St.)	KIND OF WORK: Grading & Paving	
CONTRACTOR: Rowell & Wickersham	CONTRACT NUMBER: 7288	FEDERAL AID PROJECT NUMBER: State
DATE OF CONTRACT: July 3, 1969	DATE WORK STARTED: July 28, 1969	ESTIMATED COMPLETION DATE: Completed Sept. 15, 1969
AVERAGE FORCE ON PROJECT FOR THE WEEK: MEN: 0 SUPERVISION: 0	SPECIFIED WORK DAYS: ----	WORK DAYS USED: ----
	SPECIFIED CALENDAR DAYS: 50	CALENDAR DAYS USED: 56
PROJECT AUTHORIZATION: $ 45,501.15	SPECIFIED COMPLETION DATE: End of 50 Calendar days	PERCENT OF TIME ELAPSED: 112
EXCLUSIVE OF ENGINEERING: $ 41,527.25	ENGINEERING AUTHORIZATION: $ 3,973.90	PERCENT OF CONTRACT COMPLETED BASED ON ESTIMATED COST: 100
ESTIMATED COST OF COMPLETED PROJECT, EXCLUSIVE OF ENGINEERING: $ 38,345.88	ENGINEERING COST TO DATE: $ 5,400.00	PERCENT OF CONTRACT COMPLETED BASED ON TOTAL AUTHORIZATION: 100
ESTIMATED PERCENT: UNDERRUN -9.2 %	Eng. Cost this Wk. 550.00	DATE PROJECT WAS COMPLETED:
	PERCENT OF AUTHORIZATION: 136 %	September 15, 1969

ESTIMATED PERCENT COMPLETE (ROADWORK)

CLEARING	DRAINAGE	GRADING	BASE	OIL AND/OR PAVE.	MAT'L. PROD.	C.T.B.	Class "B" A.C.
100	100	100	100			100	100

	GRADING	SURFACING	MAINTENANCE MATERIALS	OIL & BITUMINOUS MACADAM	PAVING
MILES IN PROJECT	0.16	0.16		0.16	0.16
MILES PARTIALLY COMPLETED	0	0		0	0
MILES COMPLETED	0.16	0.16		0.16	0.16
TOTAL ESTIMATED QUANTITIES (CONTRACT)	All	4,660 S.Y.		4,260 S.Y.	4,610 S.Y.
TOTAL QUANTITIES CORRECTED TO DATE	All	5,558 "		3,880 "	4,491 "
ESTIMATED QUANTITIES MOVED OR PLACED TO DATE	All	5,558 "		3,880 "	4,491 "
AVERAGE DAILY QUANTITIES	0	0		0	0
AVERAGE DAILY QUANTITIES NECESSARY TO COMPLETE PROJECT ON TIME	0	0		0	0
NUMBER OF SHIFTS PER DAY	0	0		0	0
HOURS PER SHIFT	0	0		0	0

EQUIPMENT USED DURING THE WEEK:

None

ESTIMATED PERCENT COMPLETE (STRUCTURES)

BRIDGE NO.								
PERCENT								

	WEATHER	WORK DAYS CHARGED	HOURS DELAY	CAUSE OF DELAY
SUNDAY 21	Showers	0		
MONDAY 22	Cloudy	0		
TUESDAY 23	Cloudy	0		
WEDNESDAY 24	Cloudy	0		
THURSDAY 25	Cloudy	0		
FRIDAY 26	Cloudy	0		
SATURDAY				

Routing

Morgan
Decker
Bond
Walker
Boehme
Johnson

RECEIVED
SEP 29 1969
CONSTRUCTION DIVISION

Swan
Glenn
Litchfield
Gallagher
Stein

NOTED
R. D. CHURCH

BERGFORD

GENERAL DESCRIPTION OF ACTIVITIES FOR THE WEEK

SUNDAY 21	
MONDAY 22	No Work Project Completed.
TUESDAY 23	
WEDNESDAY 24	
THURSDAY 25	
FRIDAY 26	
SATURDAY	

REMARKS

Project was completed 9-15-69 and final cleanup completed 9-16-69.

Semi-Final records was submitted to the Division Office 9-26-69.

This will be the last weekly report submitted for this project.

SIGNED Lowell A. Johnston LOCATION 245 S.E. 2nd Ave.
Lowell A. Johnston Res. Eng. Hillsboro, 97123

PRIME RESIDENT SUBMIT 2 COPIES. WHEN BRIDGES AND GRADING BOTH ARE INVOLVED, SUBMIT 3 COPIES.

SP-F216

RECEIVED
JUL 24 1969
FOR FILING

336-1724

7288

July 23, 1969

Howell & Richardson
P. O. Box 472
Middlemiddle, Oregon 97128

Gentlemen:

We enclose for your files a fully executed copy of the following described contract which was awarded to you by the State Highway Commission:

Contract No. 7288 for grading and paving on South River Street in the city of Roseburg in Yamhill County.

A copy of this contract is also being sent to the surety on your performance bond.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

er
Enclosure

cc: United Pacific Insurance Company, Portland and Salem
D. J. Barbee
F. S. Morgan
I. D. Merchant
L. W. Rulien
Lowell Johnston

RECEIVED
AUG 12 1969
FOR FILING

936-172
7288

July 7, 1969

Rovell and Wickersham
P. O. Box 472
McMinnville, Oregon 97128

Gentlemen:

The State Highway Commission on July 3, 1969, accepted your proposal for grading and paving South River Street in the City of Newberg in Yamhill County for the sum of $39,339 and referred it to the State Highway Engineer with authority to award the contract when approval of the City of Newberg was received and the sum of $21,660 was deposited by the City.

These conditions have been satisfied and the State Highway Engineer on July 3, 1969, awarded you the project, which has been assigned Contract No. 7288.

Contract forms are being prepared and will be mailed to you for execution.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

cc

bc: Frank Morgan
D. J. Barbee
I. D. Merchant
William Geibel (SAIF)
Pacific Builder & Engineer, Inc., Seattle, Wash.
Daily Journal of Commerce, Seattle, Wash.
Daily Journal of Commerce, Portland, Oregon

CITY OF NEWBERG

414 EAST FIRST STREET — TELEPHONE 538-3921 — NEWBERG, OREGON 97132

CITY OF NEWBERG OREGON 1893

July 1, 1969

Mr. Oscar Norberg
Field Engineer
Oregon State Highway Department
Salem, Oregon

Re: River Street Improvement

Dear Mr. Norberg:

Herewith please find our check in the amount of $21,660.00 in payment of city's share of estimated cost on River Street improvement.

Very truly yours,

M. C. Gilbert
Finance Officer

MCG/ad
Encl.

RECEIVED
JUL 3 1969
ENGINEER
COUNTY & CITY DIVISION

Noted
Oscar H. Norberg

NOTED
DON HARWELL

RECEIVED
JUL 2 - 1969
FOR FILING

336-1724
7288

2947

July 1, 1969

Mr. Rene D. Maye
Superintendent, Chehalem Park
and Recreation District
114 West First Street
Newberg, Oregon 97132

Dear Mr. Maye:

Re: River Street (Newberg) Section
Yamhill County

Reference is made to your letter of June 24 concerning excess material on our River Street project which will be a joint City-State venture.

If the contract is let, our specifications state that the excess excavation will become the property of the contractor. On small city jobs such as this we normally have no place to get rid of excess excavation so it is standard procedure to make the contractor responsible for disposal. If we know of a waste area prior to the completion of our specifications, then we can suggest it as a possibility to the contractor but we generally do not specify that he must use it. In this case, it will be necessary for you to contact the contractor, if the job is awarded, to arrange for any material you might want.

Very truly yours,

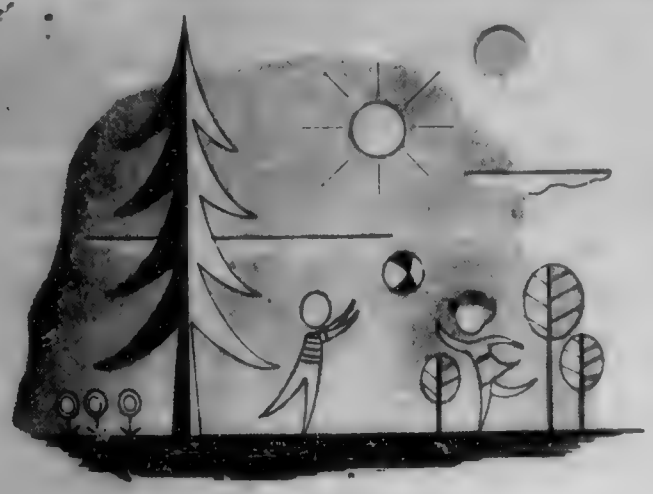
Forrest Cooper
State Highway Engineer

By

F. B. Klabee
Assistant State Highway Engineer

cc: Forrest Cooper
R. L. Porter
Tom Edwards
Victor D. Wolfe - K2947
D. J. Barbee

DNS:jp srb



REFERRED TO
Admin
BY SECRETARY

CHEHALEM PARK & RECREATION DISTRICT

114 W. First Street Newberg, Oregon 97132 • Phone – 538-2969

BOARD OF DIRECTORS

Antonia Crater

Leonard Attrell — John Chipley

Dale Halm — Ernie Leffler

Superintendent . . . Réne D. Moye

.9019

June 24, 1969

REFERRED TO
Edmund J. Kraabe "Excess mail"
BY DEPUTY STATE HIGHWAY ENGR.

State Highway Department
Salem
Oregon

Dear Sirs:

A copy of the attached letter was forwarded to the Newberg City Council for their actions.

I have the understanding that the state has some responsibility with construction that occurs on River street. Thus I hope that you will be able to take some action on that part that affects you.

I also note that you are widening River street and expect you will have some fill dirt excauvated from the site that you may wish to dispose of. At a nearby parksite in Dundee that we are developing, there is a need for topsoil and if you are looking for a place to dispose of your fill dirt we certainly would welcome whatever can be spared.

You may contact me at your convenience for directions to and/or more information on this parksite.

Thank you for your cooperation.

Sincerely,

Rene D. Moye
Superintendent

RDM:cl

Enclosure

RECEIVED
JUN 25 1969
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUN 25 1969
STATE HIGHWAY COMMISSION

NOTED
H. S. COX

June 30, 1969

Mr. M. C. Gilbert
City Recorder and Finance Officer
412 E. First Street
Newberg, Oregon 97132

Dear Mr. Gilbert:

On June 26, 1969, the State Highway Commission opened bids on the 1969 Special City Allotment project on the S. River Street in Newberg. The apparent low bidder was Rowell & Wickersham of McMinnville, Oregon.

The anticipated cost based on the bid is as follows:

Contractor's bid	$39,339.00
Anticipated additional items	400.00
Total	39,739.00
14-1/2 Engineering & Contingencies	5,762.16
Total	$45,501.16
Estimated portion of preliminary engineering charged to project	1,160.00
TOTAL ANTICIPATED COST	$46,661.16

As the contract cannot be awarded until the City has deposited its estimated share of cost, please forward, at your earliest convenience, a check or warrant to this office in the amount of $21,660, made payable to the Oregon State Highway Commission.

Checks 11-20-69

I want to call your attention to the fact that the bid overran the engineer's estimate 19% in case you want to take other action in this matter.

Very truly yours,

H. S. Cox
County and City Engineer

By Oscar H. Norberg

Oscar H. Norberg
Field Engineer

OHN:lat

bcc: L. H. Young
L. W. Fulton

NOTED
MAINOR C. HOLMES

NOTED
P. B. Acceptance

NOTED
DON HARWELL

NOTED
RICHARD UNREIN

Newberg (S. River St.)
Marshall Co

5-16-69

NOTED
H. S. COX

* General Excavation 22646 cy	All Specified	#		5225.00
Stone Base, - 6 inches thick - 914 c.y.	4660 Sq. yds.	0.85		3961 -
Cement Treated Base - 8 inches thick 1642 T	4260 Sq yds	1.85		7881 -
Class "B" Asphalt Concrete, 4 inches thick 947	4610 Sq. yds.	2.10		9681 -
12-inch Sewer Pipe	150 lin. ft	4.00		600 -
Concrete Manholes.	1 only	300.00		300 -
Concrete Inlets, Type ~~C-F~~ CG-1	4 only	135.00		540 -
Concrete Curb, Type "A" Mod	1490 lin. ft	2.50		3725 -
Concrete Curb, Type "C"	90 lin. ft	1.75		157.50
Concrete Driveways	90 Sq. yds	6.50		585 -
Concrete Walks	50 Sq. yds	6.00		300
				32955.50
	Anticipated			400
				33355.50
	14½% E & C.			4836.55
				38192.05
	Preliminary Engineering			516.00
				38,708.05

FLAGGING.
Salvage & Reinstall 100 -
Street Signs. 300 -

* Gen Exc also includes $1500.00 for Channel (500 Field Est)
and Trench Exc 3589 @ 4.00

$\frac{13,192.05}{38,192.05} \times 1500.00 = 516.00$

RECEIVED
MAY 16 1969
ENGINEER
COUNTY & CITY DIVISION

Noted
Oscar H. Norberg

NOTED
RICHARD UNREIN

NOTED
DON HARWELL

CITY OF NEWBERG

NOTED
H. S. COX

414 EAST FIRST STREET
TELEPHONE 538-3021
NEWBERG, OREGON 97132

CITY OF NEWBERG OREGON 1893

NOTED
H. S. COX

May 6, 1969

Mr. Oscar Norberg
Oregon State Highway Dept.
Salem, Oregon 97310

Dear Mr. Norberg:

Mr. Unrein called on Monday, May 5th in regards to closing of River Street to through traffic during construction period.

Please be advised the council does approve the closing of River Street to traffic during construction and widening of the street.

Very truly yours,

M. C. Gilbert
Finance Officer

MCG/ad

Copies to: L.W. Rolien
C G. Swenson

RECEIVED
MAY 7 - 1969
ENGINEER
COUNTY & CITY DIVISION

NOTED
RICHARD UNREIN

NOTED
DON HARWELL

OREGON STATE HIGHWAY DEPARTMENT
CONSTRUCTION DIVISION
SOILS AND GEOLOGY SECTION
PROJECT BASE DESIGN

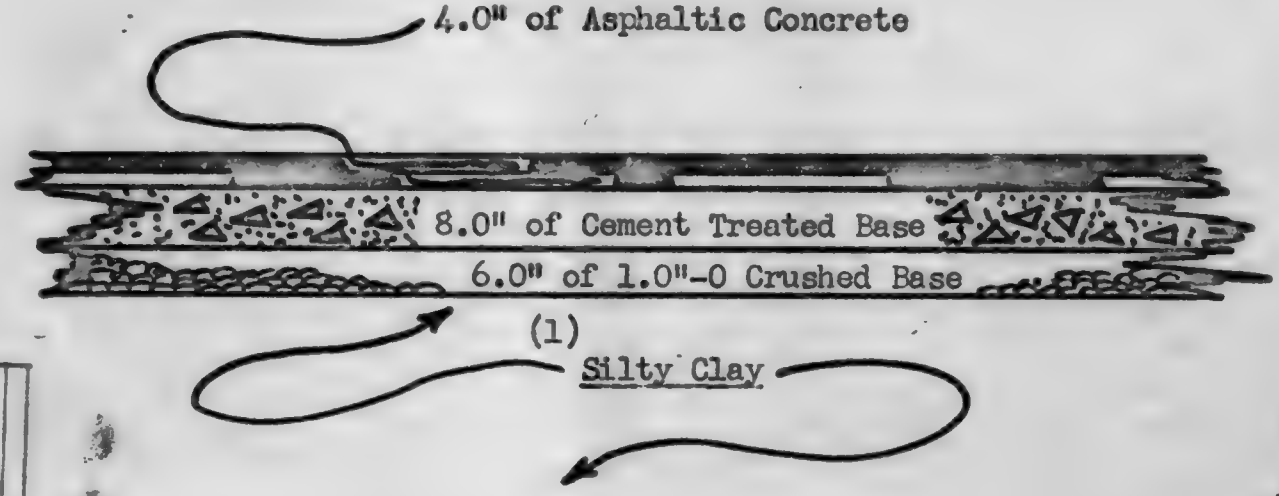
Section SOUTH RIVER STREET Highway CITY OF NEWBERG County YAMHILL Prefix

Res. Engr. Lowell Johnston Approx. Length 0.16 Miles. Sta. to Sta. Date 4-2-69
Mean

Truck A.D.T. 156 Traffic Coefficient 8.3 18 kip s.a. per day 90.3.

Annual Precipitation 39"± (Rex) Frost Penetration - - - -.

(1)
Typical Soil
40 LL
16 PI
100 %P 10
95 %P200
0 %Gravel
1 %C Sand
4 %F Sand
58 %Silt
37 %Clay
4 "R" Value



CBE Total Req.	Credit	Actual Thick.	
	8.0	4.0	A.C.
	14.5	8.0	CTB
	6.0	6.0	Cr. Base
28.5	28.5	18.0	

AASHO CLASSIFICATION:
A-6 (10)

MATERIAL SOURCES:
To be determined by the Engineer.

RECEIVED APR 1 1969 FUEL L...

336-173 1288

NOTED
F. B. KLABOE

See Page 2 for remarks.

cc
B.P.R.
Asst. State Highway Engineer
Construction Engineer
Engineer of Materials
Division Engineer
Resident Engineer
Design Engineer
Specifications Engineer
Final Design Engineer
Division Geologist
County-City (2)

Submitted by C. A. Berg
for Staff Assistant

Recommended by O C Mitchell
Engineer of Materials

Recommended by A. L. Becker
asst Construction Engineer

Approved by B Kloboe
Asst. State Highway Engineer

SECTION: SOUTH RIVER STREET

HIGHWAY: CITY OF NEWBERG

COUNTY: YAMHILL

"OTHER ROADS"

Traffic Coefficient	A.C. Wearing Surface	~~X.C.T.B.~~ C.T.B.	3/4"-0 Level	1.0"-0 Crushed Base	S.S. or L.T.S.	"CBE" Total Requirement	Actual Thickness
7.0 - 8.0	3.5"	6.0"	—	7.5"	—	25.5"	17.0"
6.0 - 7.0	3.0"	4.0"	—	9.0"	—	22.0"	16.0"
4.8 - 6.0	2.0"	—	2.0"	12.5"	—	18.5"	16.5"
Cars Only	2.0"	—	2.0"	7.5"	—	13.5"	11.5"

Remarks:
The coarse base to consist of the same material as crushed for the C.T.B.

Should substitutions be made use the "CBE" Total Requirement column to obtain the "Total Thickness Required" and the table below for values:

1.0"	Asphaltic Concrete	=	2.0" Crushed Base
1.0"	Plant Mix Bituminous Base	=	1.8" Crushed Base
1.0"	Cement Treated Base	=	1.8" Crushed Base
1.0"	Oil Mat	=	1.1" Crushed Base
1.0"	Stone Subbase (Per Standard Specifications plus Supplementals)	=	0.8" Crushed Base
1.0"	Lime Treated Subgrade	=	0.8" Crushed Base

Above factors apply to materials that comply with Standard Specifications, Supplemental Standard Specifications, and Special Provisions.

TRAFFIC ANALYSIS

SECTION: SOUTH RIVER STREET

HIGHWAY: CITY OF NEWBERG

COUNTY: YAMHILL

2200 Present ADT (1969)

5 Percent Trucks

AXLES	TWO WAY TRUCK ADT	EXPANSION FACTOR	TOTAL TADT	MEAN TADT	ONE WAY EWL	AVERAGE ANNUAL EWL
2	35	1.7	60	48	450	21,600
3	15	1.7	26	26	1000	26,000
4	10	1.7	17	14	1250	17,500
5	50	1.7	85	68	3180	216,240
6	0	---	---	--	2570	------
				156 TOTAL		

TOTAL AVERAGE ANNUAL DESIGN EWL 281,340

TWENTY YEAR EWL 5,626,800

TRAFFIC COEFFICIENT 8.3

SECTION: SOUTH RIVER STREET

HIGHWAY: CITY OF NEWBERG

COUNTY: YAMHILL

PAVEMENT TYPE SELECTION

Principal Factors Governing Selection

1. Traffic Classification: See attached sheet
2. Soils Characteristics: See design chart attached
3. Weather: See design chart attached
4. Performance of Similar Pavements in Area: Good X Fair _____ Poor _____
   Remarks: When constructed to present OSHD Surfacing Design Standards
5. Cost Comparisons: See remarks

Secondary Factors Governing Selection

6. Adjacent Existing Pavements: Asphaltic Concrete, P.C.C., and Oil
7. Stage Construction: Not applicable
8. Depressed, Surface, or Elevated Design: Surface
9. Conservation of Aggregates: See remarks
10. Stimulation of Competition: See remarks
11. Construction Consideration: See remarks
12. Municipal Preference, Participating Local Government Preference, and Recognition of Local Industry: City requested Asphaltic Concrete
13. Traffic Safety: Not a problem
14. Availability of an Adaption of Local Materials or of Local Commercially Produced Paving Mixes: Local materials are adaptable to this type construction.

CONCLUSION AND REMARKS:

No cost comparison made as this is a short (0.16± mi.) project, and traffic does not warrant the use of C.R.P.C.C.

LOCATION NARRATIVE

City of Newberg (First Street-Fourth Street)
City Street (River Street)
Yamhill County
336-1424-901

RECEIVED
MAR 17 1969
ENGINEER
COUNTY & CITY DIVISION

Highway: This project is on River Street which is a connecting street running southerly from First Street, which latter street carries 99W traffic through the city of Newberg.

Alignment: The alignment is on tangent with the centerline of River Street.

Terminii: The northerly end of the project is at the intersection of the centerline of River Street and the southerly curb line of First Street, Station 0+28. The southerly end of the project is at Station 8+76, which is the north curb line on Fourth Street.

Length: The total length of the project is 858 feet, or 0.16 mile.

Typical Section: The distance between curbs on this project is 42 feet, and will provide two 12-foot travel lanes with an 8-foot shoulder on each side with the modified type "A" curb and gutter taking up a 1-foot width on each side of the roadway.

Earthwork: The net amount of general excavation on this project is 2,543 cubic yards. As this is all on a cut section, the entire amount of excavation is excess material which is to become the property of the contractor and to be disposed of by him in a manner not unsatisfactory to the engineer.

Drainage: Drainage is a minor item on this project, as the only new drainage installation is at the intersection of Second Street and River Street. Drainage here is picked up by catch basin and pipe, and carried to a manhole that is to be constructed on the existing 10-inch sewer line now in place which carries the drainage to Hess Creek.

Access: This project is in the city of Newberg, and all access control is under the control of the City. The driveways shown on the plan are as indicated by Mr. Probasco, City Superintendent for the City of Newberg.

Surfacing Material: Surfacing material can be obtained from commercial plants in the vicinity of Dundee or Dayton.

Utilities: There are several utilities along this street, but as per the State-City agreement, the City of Newberg is to take care of any utility moving that is required.

Agreements: An agreement has been made between the State Highway Department and the City of Newberg.

NOTED
RICHARD UNREIN

Parks: There are no parks or roadside rest areas involved, but this project does run adjacent to the existing city park as well as the Minthorn House, which is the boyhood home of Herbert Hoover. In as much as we are building this project on existing right of way, it does not affect either the park or Minthorn House property.

In line with Mr. Klaboe's letter of December 2, 1968 regarding these small city jobs, I have attempted to reduce cost as much as possible, and one of the items eliminated was the finishing roadbed and slope item. I would recommend that the air degradation requirement be eliminated on this project. I would also recommend that the 1/4 - 10 specification in the 1/4 - 0 not be made a part of this project. The sand equivalent was reduced from our 35, as shown in the standard specifications, to a minimum of 30 in order to make the rock requirement a little easier to meet.

Lowell A. Johnston
Resident Engineer

LAJ:fb

City of Newberg
River Street (First Street-Fourth Street)
Yamhill County
336-1424-901

RECEIVED
MAR 17 1969
ENGINEER
COUNTY & CITY DIVISION

QUANTITY SUMMARY & COST ESTIMATE

Item	Unit	Quantity	Allowance	Total	Unit Price	Amount
Temporary protection & Direction of Traffic	All			All	Lump Sum	$ 700.00
Clearing & Grubbing	All	(Includes curb removal, 4 inlets, concrete sidewalks & driveways & 6 maple trees)		All	Lump Sum	1,500.00
General Excavation	Cu.Yd.	2,543	257	2,800	$ 1.50	4,200.00
Trench Excavation	Cu.Yd.	50	5	55	4.00	220.00
Watering	M-Gal	65	7	72	4.00	288.00
Leveling Course 3/4"-0	Cu.Yd.	296	34	330	3.75	1,237.50
Crushed Base Material	Cu.Yd.	2,296	234	2,530	3.50	8,855.00
Class "B" Asph. Concrete	Ton	831	84	915	9.00	8,235.00
Binder RC-250	Ton	5	1	6	75.00	450.00
Aggregate in Binder Course	Cu.Yd.	32	3	35	6.25	218.75
Concrete Inlets, Type G-1	Each	4	1	5	130.00	650.00
Concrete Manhole, Type "A"	Each	1	-	1	300.00	300.00
12" Culvert Pipe	Lin.Ft.	125	15	140	4.00	560.00
Concrete Curbs, Types "A" and "C"	Cu.Yd.	52	5	57	45.00	2,565.00
Concrete Sidewalks	Sq.Yd.	86	9	95	6.00	570.00
Concrete Driveway	Sq.Yd.	10	1	11	6.50	71.50
Extra for Paving A.C. Drwy	Each	2	1	3	50.00	150.00

Total Contract Amount	$30,770.75
Flagging	100.00
Salvage & Reinstall Street Signs Extra Work	300.00
SUBTOTAL	31,170.75
Engr. & Contin. 20%	6,229.25
TOTAL PROJECT COST	$37,400.00

P.E. Est. = $1500

$\frac{12,400}{37,400} \times 1500 = \$497.$

fb

498.00

$38,897.00

NOTED
RICHARD UNREIN

RECEIVED
FEB 10 1969

336-1721
7288

February 7, 1969

MISC. CONTRACTS and AGREEMENTS No. 3671

City of Newberg
City Hall
Newberg, Oregon 97132

Attention: M. C. Gilbert
City Recorder

Gentlemen:

Attached for your records is a fully executed copy of an agreement covering improvement of South River Street in your city.

We have retained a fully executed copy of this agreement for the Commission's files.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

fkn
Attachment

cc H. S. Cox
(agreement attached)

DEPARTMENT
TO JAN 28 1969

1-23-69

PREFIX NO. 336-1424

336-1724
7288

LOCATION PROSPECTUS
NEWBERG (FIRST STREET-FOURTH STREET) SECTION
CITY STREET - YAMHILL COUNTY

HIGHWAY: River Street. Not on State or Federal highway system.

TERMINI: From south curb line of First Street, Station 0+28 (centerline of First Street Station 0+00) to north curb line of Fourth Street, Station 8+76.

LENGTH: 848 Feet or 0.16 mile.

NARRATIVE: This will be a location survey to prepare plans, specifications and estimates for the grading and paving of the above described section. Reconnaissance has not been made. Soils investigations will be conducted. No unusual drainage problems are anticipated. An economic analysis is not needed. This is a 1969 Special City Allotment project.

TYPICAL SECTION: Two 12-foot travel lanes with two 9-foot parking lanes. Entire project to be curbed.

BRIDGE: None affected.

ACCESS: Under control of City.

BASE DESIGN: Tentative design for construction is:

Paving	3-1/2"	Class "B" Asphaltic Concrete
Top Course Base	2"	3/4"-0 Leveling Course
Bottom Course Base	14-1/2"	Crushed Base Material
Total Depth	20"	

MATERIAL. Available from commercial sources in the vicinity of Newberg, Dundee, McMinnville, Tigard, or Portland.

ADD'L FACILITIES: None.

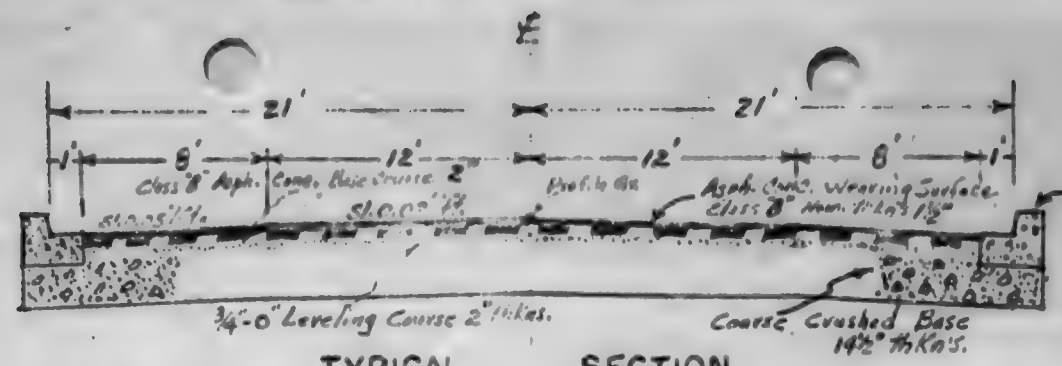
AGREEMENTS: Routine agreements for Special City Allotment project.

NOTED
F. B. KLEPPE

PARKS: City of Newberg Park borders on the easterly side of River Street. A national monument (Minthorn House--Herbert Hoover's boyhood home) is located on Southeast Second and River Streets. These parks not affected as project is to be constructed on existing right of way.

January 23, 1969
Attach

cc's L.W. Rulien (3)
Forrest Cooper
Tom Edwards
F.B. Klaboe
V.D. Wolfe
D.J. Barbee
F.B. Crandall
F.L. Hall
E.S. Hunter
Ivan Merchant (4)
D.H. Moehring (3)
F.D. Morgan
L.H. Young
J. M. Cartwright (2)
R.N. Chase
H.S. Cox (2)
B. L. Gifford
W.N. Hackleman
V.J. Johnson
A.D. Olson
R.E. Olson
Jack Rowland
Robert Royer
W.H. Tebeau
F.E. Terpin
O.C. Turner
F.W. Yarbrough (2)



TYPICAL SECTION

PROSPECTUS MAP

(River Street) Newberg

Yamhill County

L.A. Johnston Res. Engr. Jan. 1969

North End of Project Sta P+28

South End of Project Sta 84+76

NEWBERG

YAMHILL COUNTY, OREGON

PREPARED BY THE OREGON STATE HIGHWAY DEPARTMENT IN COOPERATION WITH THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION BUREAU OF PUBLIC ROADS

Population 4,630

Scale in Feet

Revised May 1967

SHEET ARRANGEMENT

SHEET 1 OF 1 SHTS.

LEGEND

Post Office
School
R.R. Depot
Public Bldg.
cr – City Hall
cr – Court House
a – Armory
l – Library
Street open for travel
Street dedicated but not open
City Limits

HIGHWAY CLASSIFICATION

	State (Red)	Federal (Green)
PRIMARY		
SECONDARY	000	000
OTHER	C.O.	N.F.D.

SIGNED ROUTES

INTERSTATE
U.S.
STATE

Post Office
School
R.R. Depot
River
Creek
City

Form E-30 - 3M - 2-55

OREGON STATE HIGHWAY DEPARTMENT

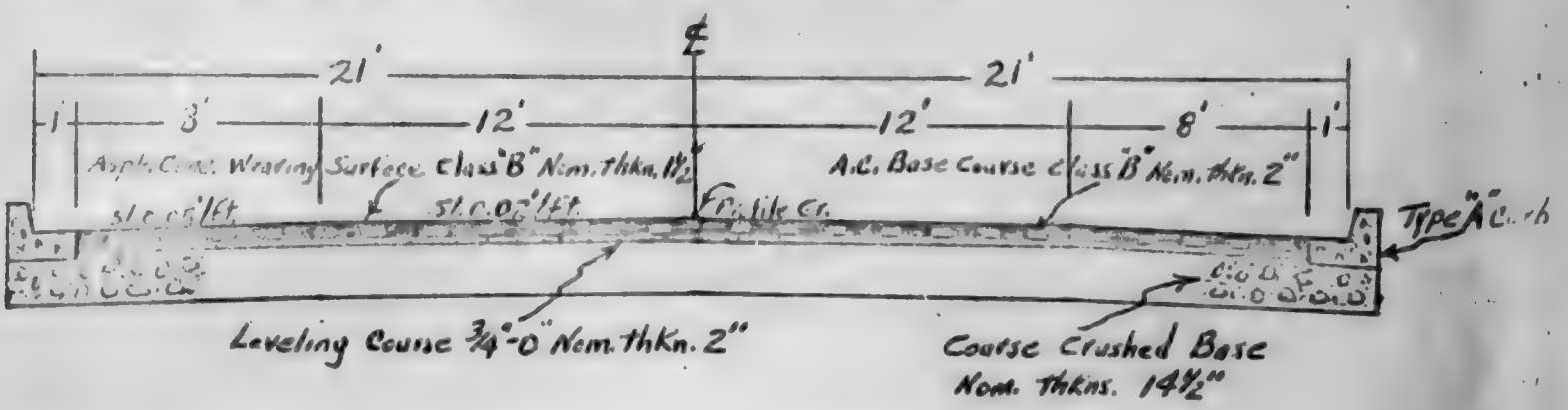
AUTHORITY FOR SURVEY

~~New Road~~ Section (First Street - Fourth Street) Date January 7, 19 69

Highway City Street (River St.) ~~City of Newberg~~ Authorization No. 1

County Yamhill Division I Survey Prefix 336 14x4 (Assigned by Salem office)

Description of termini, route, length, etc.: On River St., from south curb line of First St. to north curb line of Fourth St. Length 848 feet or 0.16 mile.



Typical Section

Purpose of survey:

To perform field work, prepare plans, specifications and estimate of cost.

Estimate of cost:

Field and Office	(901)	$ 1,000.00
Plans	(905)	400.00
Utility	(914)	100.00

INSTRUCTIONS

Sumbit ~~three~~ four copies to Salem. After approval by the State Highway Engineer, one copy will be sent to the Division Engineer and one copy to the Resident Engineer.

This form does not constitute authority for making survey until approved and returned.

Submit separate order for each survey.

Total estimated cost of survey . . . . . $ 1,500.00

Previous authorization . . . . . .

Additional authorization requested . . . . .

Additional authorization approved (Salem) . .

Total all authorizations approved (Salem) . . .

Request made by:

Lowell A. Johnston Field Engineer

Recommended for Approval:

Division Engineer

Recommended for Approval:

D. J. Barber Design ~~XXXXXXXX~~ Engineer

Approved:

F. B. Klaboe Ass't State Highway Engineer

State Printing 63000

PROGRAM & PLAN. DIV.

P. E. APP'R. ..... NOTED RICHARD UNREIN

FED. - AID ..... STATE .....

NOTED ... HARWELL

P. E. Appraiser

December 18, 1968

Mr. M. C. Gilbert
City Recorder and Finance Officer
City Hall
Newberg, Oregon 97132

Dear Mr. Gilbert:

On December 17, the State Highway Commission approved the City's request for a 1969 Special City Allotment project to be constructed from funds authorized by ORS 366.805.

The project was approved on the basis of the attached project description and city map showing, colored in red, the limits of the approved project. Also attached are regulations pertaining to these projects.

You will be contacted in the near future concerning construction details.

Very truly yours,

Forrest Cooper
State Highway Engineer

By

H. S. Cox
County and City Engineer

Elfeb

Attachments
cc L. W. Hallen

NOTED
RICHARD UNREIN

NOTED
DON HARWELL

City: Newberg
County: Yamhill
Division No.: I
Population: 1963 4,280
1968 4,790
Previous Projects 2
Previous Amount $ 40,000
Last Project 1963

PROPOSED PROJECT - 1969:

Grade and pave South River Street from East First Street to East Fourth Street. Provide 42' curbed street section.

Length of project: 0.17 mile.

Base design: 14-1/2" coarse crushed, 2" level course, 3-1/2" asphaltic concrete.

	S.C.A.	City	Total
Estimated Cost:	$25,000	$22,000	$47,000

Remarks:

Existing roadway badly distorted and failing from use by trucks proceeding to new paper mill. This street also serves a large residential area.

Recommendation: Approval recommended.

NEWBERG

YAMHILL COUNTY, OREGON

PREPARED BY THE
OREGON STATE HIGHWAY DEPARTMENT
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

Population 4,630

Scale in Feet

Revised May 1967

LEGEND

- Post Office
- School
- R. R. Depot
- Public Bldg.
  - cp – City Hall
  - cth – Court House
  - a – Armory
  - l – Library
- Street open to travel
- Street dedicated but not open
- City Limits

SIGNED ROUTES

- INTERSTATE
- U.S.
- ORE.

NOTED
H. S. COX

CITY OF NEWBERG

414 EAST FIRST STREET
TELEPHONE 538-3821
NEWBERG, OREGON 97132

CITY OF NEWBERG OREGON 1893

September 13, 1968

Mr. Richard Unrein, Field Engineer
Oregon State Highway Department
Salem, Oregon 97310

Dear Mr. Unrein:

Please be advised the City of Newberg does wish to have the River Street project completed.

The City will have funds available July 1, 1969 for its share of costs in excess of the $25,000.

Very truly yours,

M. C. Gilbert
Finance Officer

MCG/ay

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SEP 16 1968
ENGINEER
COUNTY & CITY DIVISION

NOTED
RICHARD UNREIN

NOTED
DON HARWELL

NOTED
H. S. COX

NOTED
H. S. COX

September 9, 1968

Mr. M. C. Gilbert
Finance Officer
City Hall
Newberg, Oregon 97132

Dear Mr. Gilbert:

It is planned to submit your proposed project on River Street from First Street to Fourth Street to the Highway Commission for consideration of construction (1969) under the Special City Allotment Act (ORS 366.805).

Your proposed project, based upon a reconnaissance investigation, is roughly estimated to cost $47,000 for providing a 42-foot curbed street section; State's share - $25,000. (22,400?)

Should the Highway Commission look with favor on your project, would the city of Newberg be willing and able to pay all costs of the project in excess of $25,000?

Early receipt of a letter stating Newberg's ability and willingness to participate in the above project would be appreciated.

Very truly yours,

H. S. Cox
County and City Engineer

By

NOTED
RICHARD UNREIN

Richard Unrein
Field Engineer

Council meets - Oct 7.

NOTED
DON HARWELL

1962 20,000
1963 20,000

S.C.A. Investigation Data

City of NEWBERG Date 4-16-68 Div. 1
Population: 1968 4790 1963 4280
Street S. River St. from 1st St. to 7th St.

No. previous projects 2
Last project 1963 (year)
Total SCA funds $ 40,000
Funds/capita $ 8.35
Average/capita $ 12.01

EXISTING

Surface now in place: A.C. X Oil ___ Gravel ___ Concrete X
Surface width: 24 feet, Shoulder-shoulder width: — feet
C-C width: 24 feet, R/W width: 60 feet
Remarks: Existing surface badly distorted and has excessive crown. Large number of trucks using St heading for paper mill & River.
Met with Mr. Gilbert, Recorder & Mr. Probasco, St. Supt.
9000 pieces

PROPOSED

Surfacing: A.C. X Oil — Other —
Pave. width: 39 feet, Shoulder width — feet, C-C width: 42 feet
BASE DESIGN: A.C. 3½ inches, Leveling 2 inches, Base 14½ inches
? Lime T.S.G. — inches, Blanket — inches, P.M.B.B. — inches
Length: 0.17 mile, 880 feet. Type curb: "A"
Remarks:

ESTIMATE Item	Unit	Gross*	Price	Amount
Temp. protection & direction of traff. ($500-$1,000)	all	all	$ L.S.	$ 700.00
Clearing & grubbing	all	all	L.S.	1,000.00
General excavation	c.y.	3,650	1.35	4,927.50
Finishing roadbed & slopes ($1,500)	mile	0.17	1,500.00	255.00
Trench excavation	c.y.	180	3.50	630.00
Watering	M-gal.	85	4.00	340.00
Level material (3/4-0)	c.y.	340	4.00	1,360.00
Base material	c.y.	2,650	3.75	9,937.50
Asphalt	ton	885	9.00	7,965.00
Binder	all	all	L.S.	665.00
Concrete inlets	each	9	160.00	1,440.00
Culvert pipe 12"	lin. ft.	840	3.75	3,150.00
Concrete curbs	c.y.	98	45.00	4,410.00
" driveways	sq. yd.	85	6.00	510.00
Culvert pipe 18"	Lin. ft.	80	6.00	480.00
M.H.'s	Each	1	350.00	350.00
Adj. M.H.'s	Each	2	100.00	200.00

curb & gutter

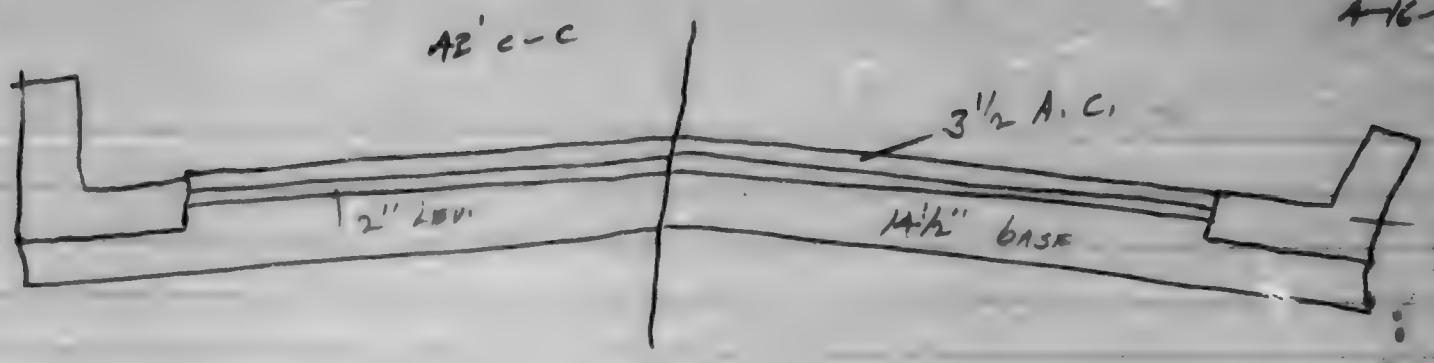
*Items include 10% allowance

Total	$ 38,370.00
Perm. signing ($100/intersection)	250.00
Flagging	100.00
Total	$ 38,670.00
Engineering & contingencies (20%)	7,734.00
Total	$ 46,404.00
City's estimated share of survey	692.00
TOTAL ESTIMATED COST	$ 47,096.00

$ 47,000

$ 276,000 / MILE

NEWBURG
S. RIVER ST.
A-16-68
KLH.



GEN. EXC. = $\frac{2.1 \times 44 \times 970 \times 1.1}{27}$ = 3,650 C.Y.

TR. EXC. = $\frac{2.2 \times 2.4 \times 920}{27}$ = 180 C.Y.

WATER = .0225 x (2,990) = 85 M GAL.

LEV. = $\frac{.17 \times 39 \times 970 \times 1.43}{27}$ = 340 C.Y.

BASE = $\frac{1.21 \times 42.5 \times 970 \times 1.43}{27}$ = 2,650 C.Y.

A.C. = 91.3 x 7.9 = 885 TON

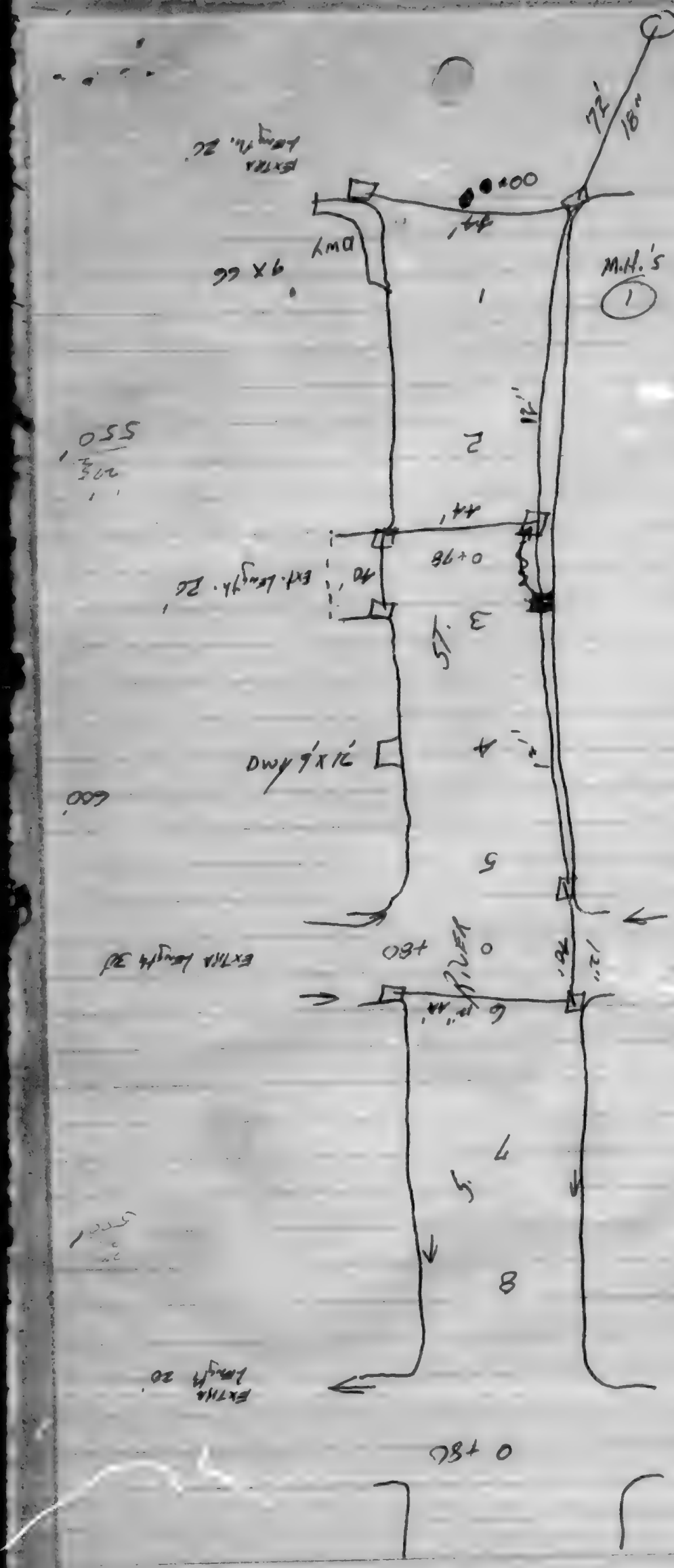
BINDER = ~~$~~ 3,906 x .19 = ~~$~~ 665

TYPE "A" CURBS = .054 x 1800' = 98 C.Y.

DWYS = $\frac{9 \times 85}{9}$ = 85 SQ. YDS

SURVEY EST. ~~$~~ 1,500

$\frac{21,804}{46,404} \times 1500$ = ~~$~~ 692


M.H.
72'
18"
1.ST ST
M.H.'s
1
In Lots
8
1
9
Adj M.H.'s
2
12" pipe
550
88
44
80
762
76
838
840
18" pipe
92
8
80
NEWBERG
S. RIVER ST
1-10-68 pd.
2nd ST.
3rd ST
4th ST.
Length = 880
Extra = 90
970 computing
5+60
0+10
550
Curbs
550
600
580
1730
70
1800
N
1
2
3
4
5
6
7
8
0+78
0+80
0+80
0+80
44'
44'
12"
12"
12"
12"
Dwy 9'x16'
Dwy 9'x16'
Extra Length 20'
Extra Length 20'
Extra Length 20'
550'
600'

SCA

PROJECT DATA, CITY OF NEWBERG Date March 30, 1968

To be financed by Special City Allotment Fund and necessary city funds.

Street name River Street (1st to 4th)
(Locate project on attached map.

RECEIVED
APR 11 1968
ENGINEER
COUNTY & CITY DIVISION

Project length 850 feet

DESIRED STREET SECTION:

Standard roadway; width of travel way: 42 feet, width of shoulders: ___ feet

Curbed section; width curb to curb: 42 feet

Remarks A standard street section of 42 feet is desireable. Oregon State Highway Standards

Surface now in place: Oil X Paving X Gravel (Asphalt surface over concrete)

Present surface width: 60 feet

RIGHT-OF-WAY: (City shall, without cost to State, provide all right-of-way required)

Width of present right-of-way: 60 feet

Additional right-of-way required? Yes ___ No X

State to furnish right-of-way descriptions? Yes ___ No X

Give width of intersecting streets: 60 feet

Are intersecting streets curbed? Yes X No ___

Remarks Use existing surfaced roadbed and widen 9 feet on each side.

CONCRETE CURBS: (All new curbs to be constructed at city's expense.)

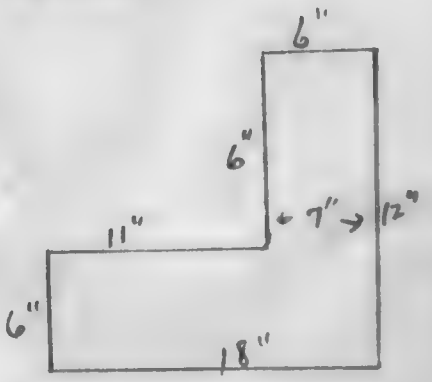
Now in place? Yes X No ___

Width between present curbs: 24 feet

City to construct curbs? Yes ___ No X

To be constructed as part of project? Yes X No ___

Length of desired radius on curb returns: 10 feet



Does city desire special type of curbs? Yes X No ___

Explain: Standard design for streets Combination Curb & Gutter

NOTED
LEONARD UNREIN

SIDEWALKS (All new sidewalks to be constructed at City's expense.)- - - - - -

Are sidewalks now in place? Yes X No___

Present sidewalks, Length: 800 feet; Width: 4 feet

Distance between present sidewalks: 50 feet

Are sidewalks to be constructed as part of project? Yes__ No x

Width of sidewalks to be constructed: ___ feet

Are sidewalks to be constructed only on one side of street? Yes___ No X

Are sidewalks to be constructed on both sides of street? Yes___ No X

Give: Length to be constructed and On which side of street

0 feet N.___ S.___ E.50' W.___

0 feet N.___ S.___ E.___ W.50'

Should sidewalks be placed against curbs? Yes___ No X

Is utility strip required? Yes X No___; Width: 6 feet

Remarks Portland General Electric Co. has a transmission line along East side (Part Way)

STORM SEWERS -

Now in place?. Yes X No___

If yes, are they adequate for increased flow? Yes X No___

Indicate depth of main lines from present surface: 2 ± feet

To be constructed by City? Yes___ No X

To be constructed as part of project? Yes X No___

/Show location of outfall on city map./

SANITARY SEWERS -

Now in place? Yes X No___ /NOTE: City to adjust if required./

If yes, indicate depth of sewers from present surface: 2 ± feet

Remarks _____

_____

_____

RICHARD UNREIN

WATER MAINS: (City to adjust if required.)

Now in place? Yes X No ___

If yes, how deep from present surface? 2± feet

Remarks _____

_____

DRIVEWAYS: (All driveway construction beyond curb line to be at city's expense.)

To be constructed as part of project? Yes X No ___

Asphaltic concrete? Yes X No ___

Portland cement? Yes ___ No ___

How many? 2

Must driveways be Portland cement to comply with city code? Yes ___ No X

Is there a city ordinance specifying width and number of driveways permitted?
Yes ___ No X (If yes, please include copy of ordinance.)

Remarks Width & number of driveways determined by City Superintendent of Public Works.

FRANCHISED UTILITIES: (City is to arrange for any required adjustment.)

Gas lines? Yes X No ___

Electric poles? Yes X No ___

Which company? Portland General Electric Co. & Northwest Natural Gas Co.
(NOTE: If city-owned, city to adjust.)

Telephone poles? Yes ___ No X

Which company? _____

Railroad tracks? Yes ___ No X

Which company? _____

Is crossing presently protected by automatic railroad signals?

Yes ___ No ___

Remarks _____

_____

...ARD UNREIN

WORK TO BE DONE BY CITY AS PART OF PROJECT:

Grading? Yes ___ No X

Clearing? Yes ___ No X

Base rock? Yes ___ No X

Concrete curbs? Yes ___ No X

Driveways? Yes ___ No X

Remarks ~~Use existing hard surfaced roadway and widen each side to total surfaced width of 42 feet~~ RE-construct Roadway

GENERAL INFORMATION:

Are city finances available? Yes X No ___

When available? Date 7-1-68

Has city established grade on street? Yes ___ No ___
(If yes, please include copy of data.)

Please indicate site for disposal of excess excavated material: ___

Within 1 mile of area

General remarks: ___

By [signature] Mayor

By [signature] City Recorder or City Manager

By [signature] City Engineer

RICHARD LARSEN

SIGNED ROUTES

INTERSTATE
U.S.
ORE.

LEGEND

- Post Office
- School
- R. R. Depot
- Public Bldg.
  - cy – City Hall
  - cr – Court House
  - a – Armory
  - L – Library
- Street open for travel.
- Street dedicated but not open.
- City Limits.

NEWBERG

YAMHILL COUNTY, OREGON

PREPARED BY THE
OREGON STATE HIGHWAY DEPARTMENT
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

Population 4,638

Scale in Feet

Revised May-1967

SHEET ARRANGEMENT

SHEET 1 OF 2 SHEETS

LOANED
RICHARD UNREIN

R E S O L U T I O N No. 8-237

WHEREAS, Under the provisions of ORS 366.800 and 366.805 there has been withdrawn from state highway funds appropriated for allocation to the several cities of the State of Oregon the sum of Two Hundred Fifty Thousand and No/100 ($250,000) Dollars, and said sum has been set up in a separate account to be administered by the State Highway Commission and to be spent each year by said Commission upon streets not a part of the state highway system, within cities, which are receiving excessive wear through sudden increases in population in the area or heavy and unusual traffic; and

WHEREAS, the City of Newberg is an incorporated city of the State of Oregon and has a population of 4790 as given by the latest official census; and

WHEREAS, the following streets of said city, River Street from First Street to Fourth Street are not a part or parts of the state highway system, but are streets under the jurisdiction and control of said city which are "receiving excessive wear through sudden increase in population in the area, or heavy and unusual traffic," and

WHEREAS, said streets are and each of them is in need of repair, reconditioning, and other major improvement,

NOW, THEREFORE, the members of the City Council, in regular session assembled, do hereby find, declare, and resolve:

1. That the aforesaid named streets of said city are in need of repair, reconditioning, and other major improvement.

2. That said streets are in their present state and condition of disrepair by reason of excessive wear through sudden increases in population in the area, or by heavy and unusual traffic.

3. That the Oregon State Highway Commission hereby is respectfully requested to consider and declare said streets as qualified for reconditioning, repair, and other improvement out of funds allocated and made available by and through the said $250,000 appropriation of state highway revenues which is to be administered and spent by the Highway Commission.

WHEREAS, under the provisions of the [illegible] there has been withdrawn from state highway funds appropriated for allocation to the several cities of the State of Oregon the sum of Two Hundred Fifty Thousand and No/100 ($250,000) Dollars, and said sum has been set up in a separate account to be administered by the State Highway Commission and to be spent each year by said Commission upon streets not a part of the state highway system, within cities, which are receiving excessive wear through sudden increases in population in the area or heavy and unusual traffic; and

WHEREAS, the City of Newberg is an incorporated city of the State of Oregon and has a population of 4790 as given by the latest official census; and

WHEREAS, the following streets of said city, River Street from First Street to Fourth Street are not a part or parts of the state highway system, but are streets under the jurisdiction and control of said city which are "receiving excessive wear through sudden increase in population in the area, or heavy and unusual traffic," and

WHEREAS, said streets are and each of them is in need of repair, reconditioning, and other major improvement,

NOW, THEREFORE, the members of the City Council, in regular session assembled, do hereby find, declare, and resolve:

1. That the aforesaid named streets of said city are in need of repair, reconditioning, and other major improvement.

2. That said streets are in their present state and condition of disrepair by reason of excessive wear through sudden increases in population in the area, or by heavy and unusual traffic.

3. That the Oregon State Highway Commission hereby is respectfully requested to consider and declare said streets as qualified for reconditioning, repair, and other improvement out of funds allocated and made available by and through the said $250,000 appropriation of state highway revenues which is to be administered and spent by the Highway Commission.

4. That the City of Newberg does hereby offer to the State Highway Commission, and does hereby pledge complete cooperation

and assistance to the end that said city may share and participate in the use and benefit of said special fund and appropriation; and therefore does designate M.C. Gilbert as the official representative of the city in all negotiations resulting from this request.

ADOPTED by the Council this 4th day of March, 1968.

M.C. Gilbert
Recorder

STATE OF OREGON)
County of Yamhill) ss
City of Newberg)

I, M. C. GILBERT, the duly appointed, qualified and acting Recorder of the City of Newberg, Oregon, do hereby certify that the foregoing copy of Resolution No. 8-237 of said City is a true, and correct and complete copy of the original thereof on file in my custody and control

DATED this 5th day of March, 1968.

M.C. Gilbert
City Recorder

F-181(23) Saddle Mt. Jct.-Little North Fork Nehalem R. Sec., of Sunset Hwy. (Grad., pav., struct.) [redacted] 1969

#7289

RECEIVED
APR 12 1972
FOR FILING

FORM FHWA-121 (12-67)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

TO: Mr. George M. Baldwin, Administrator of Highways
Salem, Oregon

DATE: April 6, 1972

In reply refer to: 10-35 5

1289

FROM: R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project I-5-1(73)50, Rogue River Interchange Section
Oregon Project F-181(23), Saddle Mountain Junction - Little N. Fork Nehalem River Section

4-11-72
REFERRED TO

The participating construction engineering as claimed on the final vouchers on these two projects exceeded the 10 percent limitation provided in Section 121(d) of Title 23, U.S.C. The amount in excess of the 10 percent limitation is the amount of liquidated damages.

PPM 30-6, paragraph 5 d (4) (a) 1 states:

> (4) Construction Engineering: Costs may be claimed on the basis of actual expenses incurred or on a percentage basis under the provisions of PPM 30-2.1.
>
> (a) Actual cost basis:
>
> 1. When claimed on an actual basis, costs should be shown as a lump sum in the "Amount" column as an additive to the total contract construction amount that is eligible for Federal participation without considering liquidated damages assessed against the contractor, not to exceed 10 percent of participating construction costs (15 percent where approved by the Administrator) on projects where reimbursement for construction engineering is limited by law. No supporting documents need accompany the voucher, but the State should assure that adequate accounting and source records are maintained in support of its claim. (Ref: paragraph 8) Costs for construction engineering incurred by private organizations, railroads, or public utilities should be shown separately opposite the name of the organization. [underscoring added]

You are also referred to paragraph 5 d (6) (a) of the same PPM, which states:

> (a) Actual Cost - The total construction engineering costs otherwise eligible for Federal participation should be reduced by liquidated damages assessed pursuant to PPM 21-7. [underscoring added]

(more)

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN.

We are adjusting the final vouchers to conform with the requirements of Title 23, PPM 21-7, and PPM 30-6. The vouchers will be processed in a reduced amount.

RECEIVED
APR 10 1972
OFFICE OF
STATE HIGHWAY ENGINEER

STATE COPY

Monthly transaction number: 2-17	U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION Bureau of Public Roads	State: Oregon
Project report number: 9	**MODIFICATION OF FEDERAL-AID PROJECT AGREEMENT**	County: Clatsop
Modification number: 2	(PPM 21-7) 2-1-72	Project number: F-181 (23)

The Project Agreement for the above-referenced project entered into between the undersigned parties and executed by the Division Engineer on September 5, 1969, is hereby modified as follows:

	Former amount	Revised amount
Estimated total cost of project	$ 1,472,404.00	$ 1,485,468.18
Federal funds	$ 935,500.00	$ 944,015.03
Other revisions		

This modification is made for the following reasons:

Based on Final Voucher

All other terms and conditions of the Project Agreement will remain in full force and effect.

This modification is effective as of the 1st day of February, 19 72.

Oregon State Highway Division
(Official name of Highway Department)

By _____

Assistant State Highway Engineer
(Title)

By _____

(Title)

By _____

(Title)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

By _____ for
(Division Engineer)

Form PR-2A (Rev. 4-70) Existing stocks of Form PR-2A (Rev. 10-68) will be used.

1287

STATE COPY

Monthly transaction number: 6-42	FOR R-2A (REV. 10-68) U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION BUREAU OF PUBLIC ROADS	te: Oregon
Project report number: 7	**MODIFICATION OF FEDERAL-AID PROJECT AGREEMENT** (PPM 21-7) 6-11-71	County: Clatsop
Modification number: 1		Project number: F-181(23)

The Project Agreement for the above-referenced project entered into between the undersigned parties and executed by the Division Engineer on September 5, 1969, is hereby modified as follows:

	Former amount	Revised amount
Estimated total cost of project	$ 1,415,693	$ 1,472,404
Federal funds	$ 876,900	$ 935,500
Other revisions		

This modification is made for the following reasons:

To include approved items previously retained in program status and changes in bid item quantities.

All other terms and conditions of the Project Agreement will remain in full force and effect.

This modification is effective as of the 11th day of June, 19 71.

OREGON STATE HIGHWAY DIVISION
(Official name of Highway Department)

By J. K. Kabeiseman

Assistant State Highway Engineer
(Title)

By _____

_____
(Title)

By _____

_____
(Title)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

By L. R. Backlund
(Division Engineer)
For R. E. Simpson

Box 300
Salem OR 97308

Mr. R. L. Porter, State Highway Engineer
Salem, Oregon

December 10, 1970

08-35.5

R. K. Simpson, Division Engineer
Salem, Oregon

Original signed By:
L. R. Backlund
Admin. Manager

Oregon Project F-181(23)
Saddle Mt. Junction - Little N. Fork Nehalem River Section

We acknowledge receipt of Mr. Young's letter of 12/3/70 covering a revision to the project agreement.

Our Form PR 1367, Federal Aid Ineligibility Notification, Control No. 35-70-FIN-72 advised further federal participation suspended until satisfactory resolution of deficiencies.

We will take no action on revising the project agreement estimate until the deficiencies have been satisfactorily resolved.

cc:
Region
Accounts

NOTED
R N CHASE

RECEIVED
DEC 11 1970
PROGRAM & PLANNING
DIVISION

Oregon State Highway Division

Federal-Aid
Project No. F-181(23)

SADDLE MTN. JCT.-LITTLE N. FORK NEHALEM RIVER SECTION

OF THE SUNSET HIGHWAY IN CLATSOP COUNTY

Salem, Oregon, December 3, 1970

Revised project agreement estimate

Type Code 6203
Roadwork (Sta. 34+15.00 to Sta. 166+23.00) (Contract No. 7289)

Furnish Field Laboratory Building	1 only	1,000.00 $	1,000.00
Temporary Protection & Direction of Traffic	All Required		15,000.00
Clearing and Grubbing	All Required		110,000.00
Ditch Excavation, Unclassified	2,900 cu.yd.	3.00	8,700.00*
General Excavation, Unclassified	425,000 cu.yd.	0.60	255,000.00*
Embankment Foundation Excavation, Unclassified	70,300 cu.yd.	1.50	105,450.00*
Toe Trench Excavation, Unclassified	2,300 cu.yd.	2.00	4,600.00
Rock Backfill	2,200 cu.yd.	1.50	3,300.00
Overhaul	52,500 C-yd.sta.	0.40	21,000.00*
Finishing Roadbed and Slopes	2.48 mile	1,000.00	2,480.00
Trench Excavation	3,800 cu.yd.	4.75	18,050.00*
Special Backfill in Drains	2,700 cu.yd.	9.00	24,300.00*
Watering	450 M-gal.	3.00	1,350.00*
Pavement Replacement	520 lin.ft.	8.00	4,160.00
Plant-Mix Stone Base	31,000 ton	3.30	102,300.00*
Bituminous Base Mixture	26,626 ton	5.00	133,130.00*
Asphalt in Bituminous Base Mixture	1,430 ton	31.50	45,045.00
3/4"-0 Aggregate in Prime Coat	470 cu.yd.	6.00	2,820.00
RC-250 Asphalt in Prime Coat	80 ton	75.00	6,000.00
Asphalt in Tack Coat	30 ton	100.00	3,000.00
Class "B" Asphalt Concrete Mixture	19,800 ton	5.45	107,910.00*
Asphalt Cement in Mixture	1,260 ton	31.50	39,690.00
12-inch Reinforced Concrete Bridge End Panels	270 sq.yd.	27.00	7,290.00
Loose Riprap	5,500 cu.yd.	4.50	24,750.00
12-inch Culvert Pipe	320 lin.ft.	3.75	1,200.00
18-inch Culvert Pipe	1,750 lin.ft.	5.50	9,625.00
42-inch Culvert Pipe	640 lin.ft.	18.00	11,520.00
6-inch Drain Pipe	4,360 lin.ft.	2.25	9,810.00
8-inch Drain Pipe	11,240 lin.ft.	2.50	28,100.00
12-inch Drain Pipe	3,700 lin.ft.	4.00	14,800.00
18-inch Pipe Diaphragm	11 only	100.00	1,100.00
18-inch Paved Culvert End Slopes	12 only	100.00	1,200.00
42-inch Paved Culvert End Slopes	3 only	175.00	525.00

Concrete Inlets, Type G-ZMA	8 only	200.00	1,600.00
Corr. Metal Catch Inlets	6 only	100.00	600.00
Extra for A.C. Concrete Approaches	13 only	35.00	455.00
Extra for A.C. Concrete Curb	2,650 lin.ft.	1.00	2,650.00
Guide Posts, W-1	140 only	8.00	1,120.00
Guide Posts, Y-1	22 only	8.00	176.00
Guard Rail, Type 2	2,050 lin.ft.	2.75	5,637.50
Guard Rail, Type 2A	5,500 lin.ft.	4.25	23,375.00
Guard Rail Anchors	14 only	225.00	3,150.00
Roadside Seeding	22 acre	150.00	3,300.00
Roadside Mulching	22 acre	150.00	3,300.00
Grass Seed Mixture	660 lb.	1.50	990.00
Inorganic Fertilizer (22-16-8)	88 cwt.	15.00	1,320.00
			$1,171,878.50
Flagging (60% of Contractor's Costs)	All Required		28,000.00
EWO 2 Place Gravel & Construct Groing	All Required		1,000.00
EWO 3 Slide Removal	All Required		25,000.00
EWO 4 Permanent Signing	All Required		1,200.00
			55,200.00
	Subtotal		$1,227,078.50
	*10% Engr. & Cont.		121,707.50
	Total		$1,348,786.00

*Reduced in accordance with Par. 5 (Project Field Office) of PPM 30-6.

Type Code X081
Structure Bridge No. 1812A (Sta. 57+60 to Sta. 58+78) (Contract No. 7289)

Remove Old Bridge and Provide for Traffic	All Required		4,000.00
Shoring, Cribbing, Etc.	All Required		15,000.00
Structural Excavation	190 cu.yd.	6.00	1,140.00
Structural Excavation Below Elevation Shown	30 cu.yd.	6.00	180.00
Furnish 10 BP 42 Steel Piling	1,200 lin.ft.	5.50	6,600.00
Drive Steel Piles	32 only	200.00	6,400.00
Splice Steel Piles	8 only	10.00	80.00
Class "A" Concrete (296 cu.yd.)	All Required		30,000.00
115'-120' Type 5 Prestressed Beams	10 only	4,000.00	40,000.00
Reinforcement (42,400 lb.)	All Required		6,500.00
8-inch Metal Unperforated Drain Pipe	30 lin.ft.	2.00	60.00
Metal Rail	242 lin.ft.	10.00	2,420.00
	Subtotal		$ 112,380.00
	10% Engr. & Cont.		11,238.00
	Total		$ 123,618.00

Length of Roadway 2.456 miles
Length of Structure 0.022 miles
Total Length of Project 2.478 miles
Cost of Roadway Per Mile $549,179.97

Retained in Program Status

Horizontal Drains	All Required	$ 5,000.00
	Subtotal	5,000.00
	10% of Engr. & Cont.	500.00
	Total	$ 5,500.00

Summary of Funds

Item	Total Costs	Federal Funds	State Funds
Roadway	$1,348,786.00	$857,000.00	$491,786.00
Structure	123,618.00	78,500.00	45,118.00
Subtotal	$1,472,404.00	$935,500.00	$536,904.00
Retained in Program	5,500.00	3,500.00	2,000.00
Total	$1,477,904.00	$939,000.00	$538,904.00

State Funds for Const.: Chap. 175, Laws 1917; Chap. 31, Laws 1920;
Chap. 529, Laws 1939.
State Funds for Maint.: Chap. 529, Laws 1939.

Group 1-100%
Prefix No. 4-1004

SADDLE MTN. JCT.-LITTLE N. FORK NEHALEM RIVER SECTION

Project No. F-181(23)

Nonparticipating - State Work

Move Mail Box Posts	4 only	$50.00	$ 200.00

STATE COPY

Form Approved; Budget Bureau No. 41-R2089.1

MONTHLY TRANSACTION NO.	FORM PR-2 (REV. 3-66) U.S. DEPARTMENT OF COMMERCE BUREAU OF PUBLIC ROADS	STATE
9-37	**FEDERAL-AID PROJECT AGREEMENT**	Oregon
PROJECT REPORT NO.	(PPM 21-7)	COUNTY
5	9-5-69	Clatsop
		PROJECT NO. F-181(23)

The State, through its Highway Department, having complied, or hereby agreeing to comply, with the terms and conditions set forth in (1) Title 23, U.S. Code, Highways, (2) the Regulations issued pursuant thereto by the Secretary of Commerce and, (3) the policies and procedures promulgated by the Federal Highway Administrator relative to the above designated project, and the Bureau of Public Roads having authorized certain work to proceed as evidenced by the date entered opposite the specific item of work, Federal funds are obligated for the project not to exceed the amount shown herein, the balance of the estimated total cost being an obligation of the State. Such obligation of Federal funds extends only to project costs incurred by the State after the Bureau of Public Roads authorization to proceed with the project involving such costs.

PROJECT TERMINI

Saddle Mtn. Jct. - Little N. Fork Nehalem River Section of the Sunset Highway

PROJECT CLASSIFICATION OR CLASS OF WORK	EFFECTIVE DATE OF AUTHORIZATION	APPROXIMATE LENGTH (Miles)
HIGHWAY PLANNING		
PRELIMINARY ENGINEERING		
RIGHTS-OF-WAY		
CONSTRUCTION	6-27-69	2.478
OTHER (Specify)		

FUNDS Pro rata 63.54

ESTIMATED TOTAL COST OF PROJECT	FEDERAL FUNDS
$ 1,380,273.00	$ 876,900.00

The State further stipulates that pursuant to said Title 23, Regulations, and policies and procedures, and as a condition to payment of the Federal funds obligated, it accepts and will comply with the applicable provisions set forth on the reverse hereof.

OREGON STATE HIGHWAY DIVISION
(Official name of Highway Department)

By J. K. Laboe

Assistant State Highway Engineer
(Title)

By _____

(Title)

By _____

(Title)

U.S. DEPARTMENT OF COMMERCE

BUREAU OF PUBLIC ROADS

By _____
(Division Engineer)

For: R. E. Simpson

Date executed by Division Engineer September 5, 1969

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USCOMM-DC 26854-P66

Oregon State Highway Division

Federal-Aid
Project No. F-181(23)

SADDLE MTN. JCT.-LITTLE N. FORK NEHALEM RIVER SECTION
OF THE SUNSET HIGHWAY IN CLATSOP COUNTY

Project agreement estimate

Salem, Oregon, August 22, 1969

Type Code 6203
Roadwork (Sta. 34+15.00 to Sta. 166+23.00) (Contract No. 7289)

Furnish Field Laboratory Building	1 only	1,000.00 $	1,000.00
Temporary Protection & Direction of Traffic	All Required		15,000.00
Clearing and Grubbing	All Required		110,000.00
Ditch Excavation, Unclassified	1,750 cu.yd.	3.00	5,250.00
General Excavation, Unclassified	415,000 cu.yd.	0.60	249,000.00
Embankment Foundation Excavation, Unclassified	41,000 cu.yd.	1.50	61,500.00
Toe Trench Excavation, Unclassified	2,300 cu.yd.	2.00	4,600.00
Rock Backfill	2,200 cu.yd.	1.50	3,300.00
Overhaul	47,600 C-yd.sta.	0.40	19,040.00
Finishing Roadbed and Slopes	2.48 mile	1,000.00	2,480.00
Trench Excavation	4,400 cu.yd.	4.75	20,900.00
Special Backfill in Drains	2,300 cu.yd.	9.00	20,700.00
Watering	2,100 M-gal.	3.00	6,300.00
Pavement Replacement	520 lin.ft.	8.00	4,160.00
Plant-Mix Stone Base	28,800 ton	3.30	95,040.00
Bituminous Base Mixture	28,400 ton	5.00	142,000.00
Asphalt in Bituminous Base Mixture	1,430 ton	31.50	45,045.00
3/4"-0 Aggregate in Prime Coat	470 cu.yd.	6.00	2,820.00
RC-250 Asphalt in Prime Coat	80 ton	75.00	6,000.00
Asphalt in Tack Coat	30 ton	100.00	3,000.00
Class "B" Asphalt Concrete Mixture	20,900 ton	5.45	113,905.00
Asphalt Cement in Mixture	1,260 ton	31.50	39,690.00
12-inch Reinforced Concrete Bridge End Panels	270 sq.yd.	27.00	7,290.00
Loose Riprap	5,500 cu.yd.	4.50	24,750.00
12-inch Culvert Pipe	320 lin.ft.	3.75	1,200.00
18-inch Culvert Pipe	1,750 lin.ft.	5.50	9,625.00
42-inch Culvert Pipe	640 lin.ft.	18.00	11,520.00
6-inch Drain Pipe	4,360 lin.ft.	2.25	9,810.00
8-inch Drain Pipe	11,240 lin.ft.	2.50	28,100.00
12-inch Drain Pipe	3,700 lin.ft.	4.00	14,800.00
18-inch Pipe Diaphragm	11 only	100.00	1,100.00
18-inch Paved Culvert End Slopes	12 only	100.00	1,200.00
42-inch Paved Culvert End Slopes	3 only	175.00	525.00
Concrete Inlets, Type G-ZMA	8 only	200.00	1,600.00
Corr. Metal Catch Inlets	6 only	100.00	600.00
Extra for A.C. Concrete Approaches	13 only	35.00	455.00
Extra for A.C. Concrete Curb	2,650 lin.ft.	1.00	2,650.00
Guide Posts, W-1	140 only	8.00	1,120.00

Guide Posts, Y-1	22 only	8.00	$ 176.00
Guard Rail, Type 2	2,050 lin.ft.	2.75	5,637.50
Guard Rail, Type 2A	5,500 lin.ft.	4.25	23,375.00
Guard Rail Anchors	14 only	225.00	3,150.00
Roadside Seeding	22 acre	150.00	3,300.00
Roadside Mulching	22 acre	150.00	3,300.00
Grass Seed Mixture	660 lb.	1.50	990.00
Inorganic Fertilizer (22-16-8)	88 cwt.	15.00	1,320.00
			$1,128,323.50
Flagging (60% of Contractor's Costs)	All Required		15,000.00
			$ 15,000.00
	Subtotal		$1,143,323.50
	*10% Engr. & Cont.		113,331.50
	Total		$1,256,655.00

*Reduced in accordance with Par. 5 (Project Field Office) of PPM 30-6.

Type Code X081
Structure Bridge No. 1812A (Sta. 57+60 to Sta. 58+78) (Contract No. 7289)

Remove Old Bridge and Provide for Traffic	All Required		4,000.00
Shoring, Cribbing, Etc.	All Required		15,000.00
Structural Excavation	190 cu.yd.	6.00	1.140.00
Structural Excavation Below Elevation Shown	30 cu.yd.	6.00	180.00
Furnish 10 BP 42 Steel Piling	1,200 lin.ft.	5.50	6,600.00
Drive Steel Piles	32 only	200.00	6,400.00
Splice Steel Piles	8 only	10.00	80.00
Class "A" Concrete (296 cu.yd.)	All Required		30,000.00
115'-120' Type 5 Prestressed Beams	10 only	4,000.00	40,000.00
Reinforcement (42,400 lb.)	All Required		6,500.00
8-inch Metal Unperforated Drain Pipe	30 lin.ft.	2.00	60.00

Metal Rail	242 lin.ft.	10.00	$ 2,420.00
	Subtotal		$ 112,380.00
	10% Engr. & Cont.		11,238.00
	Total		$ 123,618.00

Length of Roadway 2.456 miles
Length of Structure 0.022 miles
Total Length of Project 2.478 miles
Cost of Roadway Per Mile $511,667.35

Retained in Program Status

Slide Correction	All Required	$ 25,000.00
Horizontal Drains	All Required	5,000.00
Permanent Signing	All Required	1,200.00
Place Gravel and Construct Groins	All Required	1,000.00
Subtotal		$ 32,200.00
10% of Engr. & Cont.		3,220.00
Total		$ 35,420.00

Summary of Funds

Item	Total Costs	Federal Funds	State Funds
Roadway	$1,256,655.00	$798,400.00	$458,255.00
Structure	123,618.00	78,500.00	45,118.00
Subtotal	$1,380,273.00	$876,900.00	$503,373.00
Retained in Program	35,420.00	22,500.00	12,920.00
Total	$1,415,693.00	$899,400.00	$516,293.00

State Funds for Const.: Chap. 175, Laws 1917; Chap. 31, Laws 1920;
Chap. 529, Laws 1939.
State Funds for Maint.: Chap. 529, Laws 1939.

Group 1-100%
Prefix No. 4-1004

SADDLE MTN. JCT.-LITTLE N. FORK NEHALEM RIVER SECTION

Project No. F-181(23)

Nonparticipating - State Work

Move Mail Box Posts	4 only	$50.00	$ 200.00

RECEIVED
DEC 1 - 1971

11-22-71
STATE COPY

FOR FILING
cc: OSHD (A E Johnson)
Region
Wash DC

F-181(23)

7289

U. S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration
Bureau of Public Roads

FINAL ACCEPTANCE REPORT
(PPM 20-6.1)

REGION NO.	REPORT NO.	COUNTY	DIVISION
10	17	Clatsop	Oregon
DATE OF REPORT	**REPORT MADE BY**		**PROJECT NO.**
11-22-71	J. R. Schultz, Area Engr		F-181(23)
COMPLETION DATE	**ACCEPTANCE DATE BY CONTRACT AGENCY**	**TIME ELAPSED**	**CONTRACT TIME**
12-10-70	4-23-71	A-126 %	A-280
APPROVED EXTENSIONS	**LOCATION**	B-119	B-310
30 days	Begins 0.4 miles east of Necanicum Jct. on U.S. 26		

*The PR-47, Statement of Materials and Labor Used by Contractors on Highway Construction Involving Federal Funds, has been submitted.

*A copy of the State's materials certificate is attached to the Division office copy of this report.
Compliance reviews made indicate that all applicable contract requirements relative to wage rates, payroll submissions, and labor provisions have been met.

There is compliance with section 1.23 of the Regulations pertaining to encroachment on the right-of-way.

REMARKS: *The project has been completed in reasonably close conformity with the approved plans and specifications including authorized changes and extra work.*

Copy

NOV 29 1971
REGIONAL OFFICE

SADDLE MTN. JCT. - LITTLE N. FORK NEHALEM RIVER SECTION
SUNSET HIGHWAY
Grading, Paving, and Structures

This project involved construction of 2.48 miles of roadbed grading, plant-mix stone base, plant-mix bituminous base and asphalt concrete pavement. Also included was construction of one prestressed beam span structure.

Cy Comte 12-1-71

FINAL COST

The contract item work was completed at a final cost of $1,286,168.76. The total final cost of the project, including engineering, contingencies, and adjustments, was $1,492,628.03 which is an overrun of about 3 percent. This does not reflect settlement of a claim for time extension.

OVERRUNS AND UNDERRUNS

Embankment foundation excavation overran by 71.4 percent because of the need to excavate old slide material which had been wasted over the embankment slopes.

Other contract item quantities varied within normal limits.

(more)

*NOTE: Not applicable for direct federal projects.

NOTED
TOM EDWARDS

ACCEPTANCE OF PROJECT IS RECOMMENDED		ACCEPTED BY BUREAU OF PUBLIC ROADS	
SIGNATURE		**SIGNATURE**	
J. R. Schultz		R. E. Simpson	
TITLE	**DATE**	**TITLE**	**DATE**
Area Engineer	11-22-71	Division Engineer	11-24-71

Form PR 33-E (Rev. 7-70) EXISTING STOCKS OF FORM PR 33-E (Rev. 3-68) WILL BE USED.

TIME

The total time elapsed to completion of the project was 359 calendar workdays; 310 were allowed. An early phase completion requirement was specified for the paving which was to be completed in 280 calendar workdays. The contractor overran Phase "A" by 49 days and the total contract by 25 days. The contractor requested and this office has concurred in the State's justification for a 30-day extension in both phases on the basis of extra work performed under the contract. Federal participation will, therefore, be based on assessment of $200 per day liquidated damages for 19 days overrun on Phase "A".

MATERIALS

Tests on record samples of plant-mix stone base material which indicate specification failures are explained in the State's Materials Certification. The material is considered to be in reasonably close conformity with specifications.

Price reductions covering other specification failures were mentioned in previous reports and are documented by approved price agreements.

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NOV 30 1971
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
JUL 1 - 1971
FOR FILING

F-181(23)
7289

June 30, 1971

The Astea Casualty & Surety Co.
Bond Department
1201 S. W. 12th
Portland, Oregon 97205

Gentlemen:

A post-final payment for $6,675 will be made to Ray L. Houck Sons' Corporation on Contract No. 7289 for work on the Waddle Mountain Junction--Little N. Fork Santiam River section of the Sunset Highway in Clatsop County as soon as the warrant is prepared.

The total amount paid on this contract will be $1,346,758.33 including the post-final payment. Of the total, $60,733.80 is for force account.

Very truly yours,

Floyd Smery, Secretary
OREGON STATE HIGHWAY COMMISSION

jr

cc Ray L. Houck Sons' Corporation
P. O. Box 7301
Salem, Oregon 97309

Hydegraff Insurance, Inc.
776 Commercial Street, S. E.
Salem, Oregon 97301

bc Frank Morgan
Ivan Merchant
V. E. Shoog
Attn: John Herr
R. D. Asbury

RECEIVED
JUL 21 1971
FOR FILING

F-181(23)
7289

(2)

June 23, 1971

Roy L. Houck Sons' Corporation
P. O. Box 7381
Salem, Oregon 9730[illegible]

Gentlemen:

The State Highway Commission at its meeting on June 22, 1971, considered your request for an extension of 65 days on Contract No. 7289 on the Saddle Mountain Junction-Little N. Fork Nehalem River Section of the Sunset Highway in Clatsop County.

Careful consideration was given to the reasons you submitted. However, in light of the available facts and the provisions of the contract, the Commission granted you an extension of 35 days for each unit without assessment of liquidated damages.

If there are pertinent facts which have not yet been considered, you should contact the Resident Engineer, the Regional Engineer, or the Construction Engineer in the Salem Office.

Very truly yours,

Floyd Cuery, Secretary
OREGON STATE HIGHWAY COMMISSION

fkn:dr

bc F. D. Moryan
V. E. Skoog
R. D. Asburry
Vernon Shull
Federal Highway Administration

RECEIVED
MAY 19 1971
FOR FILING

F-181(23)
7289

May 19, 1971

Oregon State Highway Commission

Request for Extension of Time
No. 2
June 22, 1971 meeting

Gentlemen:

Roy L. Houck Sons' Corporation, contractor on the Saddle Mountain Junction-Little North Fork Nehalem River Section of the Sunset Highway, Contract No. 7289, in Clatsop County, has requested a 65-day extension of time. The contractor cites overruns of specific items or added orders. This contract had a two-phase completion requirement with 280 calendar workdays allowed for completion of the paving and 310 calendar workdays for overall completion.

Although not cited by the contractor, we note an excessive five days elapsed before the contract was sent for execution. This was due to some right-of-way delay. A five-day extension applicable to both phases is therefore justified for this reason but is not eligible for Federal participation. The General Excavation and Embankment Foundation Excavation items overran 3.6 percent and 71.3 percent respectively. Based on rates of production, these overruns justify 12 days extension. Two Extra Work Orders for slide removal and scarifying and removal of existing pavement also justify extension for eight days. The last 10 days were charged pending correction of some unsatisfactory paving joints which held up acceptance of the project. This has now been resolved by a deduction from the contractor's payment and the 10 days should be deleted by time extension accordingly.

The project was completed December 10, 1970. For the reasons listed above, I recommend an extension of 35 days applicable to both units. This will eliminate all liquidated damages on Unit "B" and leave 14 days on Unit "A" in the amount of $2,800 in effect. This was a Federal-aid Primary project and we have the concurrence of the Federal Highway Administration in 30 days of the extension, leaving five days nonparticipating.

This matter will be on the agenda for your consideration at the June 22 meeting.

Very truly yours,

R. L. Porter
State Highway Engineer

cc: Floyd Query
Tom Edwards
V. D. Wolfe
A. E. Johnson
F. D. Morgan
V. E. Skoog
L. H. Young
R. D. Asburry

JAB:fw sr

OREGON STATE HIGHWAY COMMISSION

Engineers Recommendation Regarding Contractors Request

for

Increase in Number of Workdays

to

Complete Construction Contract

Investigation has been completed regarding the request (see reverse side) for an increase in the number of workdays within which to complete, without assessment of liquidated damages, the following project:

Contract No. 7289 Contractor Roy L. Houck Sons' Corp.

Highway Sunset

Section Saddle Mtn. Jct.-Little N.Fk. Nehalem River

Kind of Work Grading, Paving and Structure

It is recommended that the request for increase in the number of workdays within which to complete said contract be **DENIED** or **GRANTED**. The reasons for such recommendation are as follows:

Recommend 35 days extension for excessive time in sending contract for execution, overruns in General Excavation and Embankment Foundation Excavation, two added Extra Work Orders and correction of completion date.

Recommended for Approval:

Reg Const Division Engineer

for Construction Engineer or Bridge Engineer

Assistant State Highway Engineer

Contract No.	7289
Project designation	F-181 (23) State-Federal
Date awarded	8/21/69
Work started	8/18/69
Per cent completed	100% 12/10/70 Date
No. of Workdays Allowed	(a) 280 (b) 310
No. of Workdays Used	(a) 329 (b) 354
No. of Added Workdays Requested	55

OREGON STATE HIGHWAY COMMISSION

Contractors Request
for
Increase in Number of Workdays
to
Complete Construction Contract

Oregon State Highway Commission
Salem, Oregon 97310

Date December 28, 1970

Gentlemen:

We, the undersigned, respectfully request an increase in the number of workdays from 310 days to 375 days, within which to complete our Contract No. 7289, without the assessment of liquidated damages. The said contract is described as follows:

The dates of the workdays during which prosecution of the work was actually prevented and the conditions or causes which actually prevented the prosecution of work on said dates were as follows:

Respectfully submitted,

ROY L. HOUCK SONS' CORPORATION
Contractor

By Jean Houck

CONSENT OF SURETY

Date January 8, 1971

We, The aetna Casualty & Surety Company, as

surety on the bond guaranteeing the completion of the contract above-named and listed, hereby join in and consent to said request for an increase in the number of workdays, and hereby agree to remain fully bound as surety in all respects as if the number of workdays remained as stipulated in the original agreement.

B H Updegraff Jr
Attorney-in-fact

(SEAL)

B H Updegraff Jr
Resident Agent

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

Box 300
Salem OR 97308

TO : Mr. R. L. Porter, State Highway Engineer
Salem, Oregon

DATE: April 29, 1971

In reply refer to: 08-35-DB

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Oregon Project F-181(23)
Saddle Mountain Jct.-Little North Fork Nehalem River Section
Sunset Highway
Contract No. 7289
Request for Time Extension

Pertinent facts relative to the contractor's request for a time extension and the evaluation contained in your letter dated April 13 have been reviewed and discussed with Mr. John Bond of your construction office.

We concur in your evaluation with the exception of the 5 days allowed due to your slowness of sending the contract for execution. You attribute this slowness to a right-of-way delay. Although we concurred in the right-of-way restriction, we feel no obligation to concur in a time extension, since there was no actual delay to the contractor.

We therefore concur in 30 day extension applicable to both units. This will eliminate all liquidated damages on Unit "B" and leave 19 days of Unit "A" liquidated damages in effect. At the rate of $200 per day this will amount to $3800.

Johnson
Orig to John Bond
5-4-71

RECEIVED
MAY 3 1971
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

FORM S-30 (REV. 10-60)

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
April 2, 1971

To:

Mr. A. E. Johnson
Assistant State Highway Engineer
BUILDING

SUBJECT: Saddle Mountain Jct.-Little North Fork Nehalem River Section
Contract No. 7289
Request for Time Extension

Roy L. Houck Sons' Corporation has requested a 65-day extension of time which would, in effect, delete all liquidated damages. The contractor lists ten points all related to overrun of specific bid items or added orders. This contract had a two-phase completion requirement with 280 calendar workdays allowed for completion of the paving and an additional 30 days, making 310, for overall completion of all work. Some pertinent dates are:

Bids Opened	July 31, 1969
Contract sent for execution	August 25, 1969
Contractor started work	August 18, 1969
280 days (Unit "A") elapsed	September 17, 1970
310 days (Unit "B") elapsed	October 17, 1970
Unit "A" complete	November 5, 1970 (paving completed)
All work except pavement correction (on A. C. joints) completed	November 20, 1970
Overall Unit "B" completed	December 10, 1970 (Day count stopped November 30, 1970 by definition)

49 days Unit "A" liquidated damages at $200 per day
(September 17 to November 5)
25 days Unit "B" liquidated damages at $75 per day
(November 5 to December 1, 1970).
Total liquidated damages withheld $11,675

Although not cited by the contractor, we note an excessive 5 days elapsed before the contract was sent for execution. This was due to some right of way delay. Five days extension applicable to both phases is therefore justified for this reason.

Significant quantity overruns occurred on three items:

General Excavation	23,400 Cu. Yds.	5.6%
Embankment Foundation Excavation	29,000 cubic yards	71.4%
Ditch Excavation	710 Cu. Yds.	40.6%

The contractor requests 36 days total on these items. The Embankment Foundation Excavation was performed by dozer during normal pioneering and in conjunction with fill construction. During the weeks that the grading was performed, from June 1 to mid-August, the contractor obtained average daily production up to 11,800 yards a day. His assumed rate of 400 yards an hour is 6,400 cubic yards per day on a two-shift basis, which he worked part of the time. However, using this rate on the two-shift per day basis, the combined Foundation Excavation and General Excavation overruns justify a 12-day extension. We believe the ditch excavation overrun was incidental and did not delay overall completion of the project.

Two significant Extra Work Orders are EWO No. 3 for slide removal and EWO No. 6 to scarify and remove existing pavement. The slide removal work was performed on 31 different days from July to November. It covered only clearing and pioneering type work with the actual quantity removal done under the bid item which contributed to the General Excavation overrun discussed above. There was therefore a great deal of concurrent work along with this 31 intermittent days slide removal. Only 7 days of this occurred prior to August 4 during the main grading operation when it would be expected to have more delaying effect since it uses grading type equipment. We recommend extension for one-half of this grading time, or 4 days.

The Extra Work Order No. 6 pavement removal work occurred late in the job during bituminous base paving and just ahead of the regular paving which was already running late by that time. It was done on four consecutive days (September 23 - 26). We recommend extension for these 4 days.

The other added Price Agreements and Extra Work Orders relate to signing, obliterating skid roads, seeding and mulching, and pipes. We believe these were performed incidental to other more critical items and do not justify time extension.

During the last 10 days which were charged (November 21 through 30), there was no activity on the project and the only work remaining was to try to correct some rough paving joints which held up acceptance. The contractor's

efforts on this in December were not successful and a deduction from his payment has subsequently been made to cover some needed work. If this had been resolved in this manner in late November, the job would have been considered complete November 20 and time not charged thereafter. We therefore recommend extension for these 10 days now.

We therefore recommend a total of 35 days applicable to both units. This will eliminate the $1,875 liquidated damages on Unit "B" and $7,000 on Unit "A", leaving 14 days of Unit "A" liquidated damages in effect at the rate of $200 per day in the amount of $2,800.

This was a Federal-aid primary project. Rough draft letters to the Federal Highway Administration and the Highway Commission are attached.

F. D. Morgan
Construction Engineer

By
John A. Bond
Construction Administration Engineer

JAB:fw
Attach.
cc V. L. Gallagher

RECEIVED
APR 9 1971
OFFICE OF
STATE HIGHWAY ENGINEER

ROY L. HOUCK SONS' CORPORATION
Heavy Construction Contracting
1158 CHEMEKETA ST. N.E. SALEM, OREGON 97308
P.O. BOX 671 PHONE 585-5950

December 28, 1970

Mr. Vernon Shull
Resident Engineer
Oregon State Highway Department
P. O. Box 1185
Brookings, Oregon 97415

Re: O. S. H. D. Contract #7289-Saddle Mountain
Time Extension

Dear Sir:

We request that an extension of contract time be granted on the above project. We make this request based on the following differences:

Item A

1. Over run of quantities Item #5"General Excavation Unclassified."
This item over ran contract quantities approximately 30,000 cubic yards. This increase of quantity, partially due to slides on project, necessitated additional time to complete contract work and caused delay to other scheduled work required for project completion.
Quantity 30,000 c.y. Production 400 yds an hour = 75 hrs.
Time required to do this work 9 days.

2. Over run of quantities Item #4 "Ditch Excavation".
This item over ran contract quantities approximately 950 cubic yards. Due to terrain of existing ground the drainage requirement for this project was critical, necessitating additional facilities to control run off of surface water. This caused lengthening, deepening and adding ditches to facilitate channelization of this water. Completion of these ditches prior to completion of other scheduled contract items were necessary to protect them from damage of this run off.
Quantity 950 c.y. Production 50 c.y. hr. = 19 hours
Time required to do this work 3 days.

3. Over run of quantities Item #6 "Embankment Foundation Excavation Unclassified".
This item over ran contract quantities approximately 39,000 cubic yards. This work had to be completed prior to embankment of excavation materials and drainage installation in

areas affected by this increased yardage. The prosecution of scheduled contract work was thereby affected causing delay to the completion of the project.
Quantity 39,000 c.y. Production 200 c.y. hour = 195 hrs.
Time required to do this work 24 days.

4. Price Agreement #1
Additional 42" Pipe, Elbows, Cleanout, Diaphrams, Anchor Block was required to be installed down the embankment slope at Station 130+25 to facilitate drainage in this area. The final slope finishing and other contract items were delayed until completion of this work was accomplished.
Time required to do this work 5 days.

5. Extra Work Order #3
This work involved the cleanup of slides that occurred on the project. In some of the areas, a rock buttress was placed on slope to provide for stabilization. The work was done prior to completion of other contract items causing a delay for completion of the project. Approximately $25,000. of extra work was done to correct these areas.
Quantity $25,000. Production $300. per hr.= 83 hours
Time required to do this work 10 days.

6. Extra Work Order #6
This work involved pavement removal and grading of existing roadbed in areas of transition where adequate surfacing sections could not be attained. This required re-routing of traffic on to the new paved travel lanes and delayed other scheduled contract items of work. Approximately $3,000. of extra work was done to make these required transitions.
Quantity $3,000. Production $100. per hr. = 30 hours
Time required to do this work 4 days.

7. Extra Work Order #7
This extra work involved the clean up of ground outside the area disturbed by the contractor's work. The work was necessitated by logging operations of others and caused delay in completion of this project. Approximately $2,400. of extra work was done to obliterate these areas.
Quantity $2,400. Production $100. per hr. = 24 hours
Time required to do this work 3 days.

Item B

1. Price Agreement #4
This price agreement was required to cover an increase in the plan quantity for Item #43 "Road Side Seeding" and Item #44 " Roadside Mulching". This work could not be done until other contract items had been completed, causing a delay to the completion of the project. The approximate over run for Item #43 is 31 acres
Quantity 31 Acres Production 10 acres a day = 3 days
The approximate over run for Item #44 is 11.5 acres
Quantity 11.5 Acres Production 5 acres a day = 2 days
Time required to do this work 5 days.

2. Extra Work Order #4
This extra work was for the painting of traffic stripes after completion of the asphalt paving, and required additional time to complete the entire project.
Time required to do this work 1 day.

3. Extra Work Order #4
This extra work was required to install the permanent signing for the project. The installation was required after other contract items were completed and caused delay for the entire project.
Time required to do this work 1 day.

We request that a 65 day extension be granted for the above listed reasons.

Final contract quantities are not yet complete and upon their review we will re-evaluate our position as to time requirement for contract completion.

Very truly yours,

ROY L. HOUCK SONS' CORPORATION

By _____
Assistant Grading Division Manager

RECEIVED
JUN 16 1971
FOR FILING
E-181(23)
7289

June 15, 1971

The Aetna Casualty & Surety Company
Bond Department
1201 S. W. 12th
Portland, Oregon 97205

Gentlemen:

On June 3, 1971, we wrote to you concerning final payment on Contract No. 7289 awarded to Roy L. Houck Sons' Corporation for work on the Saddle Mountain Junction-Little N. Fork Nehalem River section of the Sunset Highway in Clatsop County.

Please disregard this letter as the total contract amount was in error. The final payment on this contract is $27,043.36 and the revised total contract amount is $1,329,883.33, including $60,753.00 for work performed under force account.

Very truly yours,

Floyd Gurry, Secretary
OREGON STATE HIGHWAY COMMISSION

cr

cc Roy L. Houck Sons' Corporation
P. O. Box 7281
Salem, Oregon 97303

Updegraff Insurance, Inc.
776 Commercial Street, S. E.
Salem, Oregon 97301

bc Frank Morgan
Ivan Marchant
R. D. Asbury
V. E. Skoog
Attn: John Herr

RECEIVED
FOR FILING
F-181(23)
7289

NOTED
A. E. JOHNSON

Salem, Oregon
May 28, 1971

MEMO TO THE FILES

RE: A. C. Penalty
Saddle Mountain Junction-Little North Fork Nehalem River
Nehalem Bay State Park
Del Rey Beach

There has been considerable discussion on the asphalt concrete production as far as penalty for non-specification mix is concerned on the subject projects. The mix for all three projects was produced from one plant belonging to Roy L. Houck Sons' Corporation and set up on the Saddle Mountain project.

Three items of a nonspecification product were involved: they were moisture content, gradation and asphalt content. The main one in question involved asphalt content. Originally, the asphalt content was based on a daily basis using tank stickings to compute volume. Later it was determined that due to excessive slope in the tanks, the stick readings were of questionable accuracy and that the asphalt content as determined by rotorex testing methods was probably better.

Therefore, the computations were made basing on the rotorex determined quantities of asphalt. There was only a minor change in the Saddle Mountain and Del Rey projects in non-specification quantities of asphalt. There will be no change involved in these two jobs.

There was, however, quite a little change in the Nehalem project and the Resident Engineer is being advised by the Region to execute a revised Price Agreement to make the change.

On this date, Jim Houck, Jerry Wimer and I met and discussed the study of the re-computations and recommendations. Jim Houck apparently agreed and it is thought that this will final out these projects.

Jerry Wimer is writing a report also on this project.

John H. Walker
Field Construction Engineer

JHW:fw

cc: A. E. Johnson
R. D. Asburry

RECEIVED
MAY 28 19
OFFICE OF
STATE HIGHWAY ENGINEER

APR 6 1971

F-181(23)
7284

April 23, 1971

Oregon State Highway Commission

Gentlemen:

Work was completed December 10, 1970 on Contract No. 7289. The contract was with Roy L. Houck Sons' Corporation and was for grading, paving and structure on the Saddle Mountain Junction-Little North Fork Nehalem River Section of the Sunset Highway in Clatsop County.

As the contractor has completed all work according to specifications, I recommend that you accept the project effective April 23, 1971 and that you concur in this procedure at the Commission meeting on May 4, 1971.

It is assumed that if you have no objections to this action and you do not advise me to the contrary, I may consider the matter has your approval.

Very truly yours,

R. L. Porter
State Highway Engineer

cc: Floyd Query
Tom Edwards
A. E. Johnson
Victor D. Wolfe
F. D. Morgan
I. D. Merchant
V. E. Skoog
L. H. Young
R. D. Asburry

VG:fw

RECEIVED
APR 16 1971
FOR FILING

F-181(23)
7249

April 13, 1971

Mr. R. E. Simpson, Division Engineer
Federal Highway Administration
Post Office 300
Salem, Oregon 97308

Dear Sir:

Re: Saddle Mountain Jct.-Little North
Fork Nehalem River Section
Contract No. 7249
Oregon Project F-181(23)
Request for Time Extension

Roy L. Houck Sons' Corporation has requested a 65-day extension of time which would, in effect, delete all liquidated damages. The contractor lists ten points all related to overrun of specific bid items or added orders. This contract had a two-phase completion requirement with 280 calendar workdays allowed for completion of the paving and an additional 30 days, making 310, for overall completion of all work. Some pertinent dates are:

Bids opened	July 31, 1969
Contract award	August 21, 1969
Contract sent for execution	August 25, 1969
Contractor started work	August 18, 1969
280 days (Unit "A") elapsed	September 17, 1970
310 days (Unit "B") "	October 17, 1970
Unit "A" complete	November 5, 1970 (paving completed)
All work except pavement correction (on A.C. joints) completed	November 20, 1970
Overall Unit "B" complete	December 10, 1970 (Day count stopped November 20, 1970 by definition)

49 days Unit "A" liquidated damages at $200 per day (September 17 to November 5)
15 days Unit "B" liquidated damages at $75 per day (November 5 to December 1, 1970)
Total liquidated damages withheld $11,675

We note an excessive five days elapsed before the contract was sent for execution. This was due to some right-of-way delay. Entry to certain Crown Zellerbach property was delayed until August 21 (a Friday) with your concurrence. Five days extension applicable to both phases is therefore justified for this reason.

Significant quantity overruns occurred on three items:

General Excavation	23,400 Cu. Yds.	5.6%
Embankment Foundation Excavation	29,000 Cu. Yds.	71.4%
Ditch Excavation	710 Cu. Yds.	40.6%

The contractor requests 36 days total on these items. He assumes a reasonable rate of 400 yards an hour which is 6,400 cubic yards per day on a two-shift basis, which he worked part of the time. The combined Foundation Excavation and General Excavation overruns justify a 12-day extension. We believe the ditch excavation overrun was incidental and did not delay overall completion of the project.

Two significant Extra Work Orders are EWO No. 3 for slide removal and EWO No. 6 to scarify and remove existing pavement. The slide removal work was performed on 31 different days from July to November. It covered only clearing and pioneering type work with the actual quantity removal done under the bid item which contributed to the General Excavation overrun discussed above. There was therefore a great deal of concurrent work along with this 31 intermittent days slide removal. Only seven days of this occurred prior to August 4 during the main grading operation when it would be expected to have more delaying effect. We recommend extension for one half of this grading time, or 4 days.

The Extra Work Order No. 6 pavement removal work occurred late in the job during bituminous base paving and just ahead of the regular paving which was already running late by that time. It was done on four consecutive days (September 23-26). We recommend extension for these 4 days.

During the last 10 days which were charged (November 21 through 30), there was no activity on the project and the only work remaining was to try to correct some rough paving joints which held up acceptance. The contractor's efforts on this in December were not successful and a deduction from his payment

has subsequently been made to cover some needed work. If this had been received in this manner in late November, the job would have been considered complete November 30 and time not charged thereafter. We therefore recommend extension for these 10 days now.

We therefore seek your concurrence in 35 days extension applicable to both units. This will eliminate the $1,875 liquidated damages on Unit "B" and $7,000 on Unit "A", leaving 14 days of Unit "A" liquidated damages in effect at the rate of $200 per day in the amount of $2,800.

Very truly yours,

R. L. Porter
State Highway Engineer

By

A. E. Johnson
Assistant State Highway Engineer

cc R. L. Porter
Tom Edwards
F. B. Morgan
V. L. Gallagher

JAB:fw ms

[illegible]
APR 26 1971

OREGON STATE HIGHWAY DIVISION

F-181(23)

HIGHWAY BUILDING • SALEM, OREGON • 97310

7289

April 7, 1971

Mr. R. E. Simpson
Division Engineer
Federal Highway Administration
P. O. Box 300
Salem, Oregon 97308

Contract 7289
Prefix 4-1004
FAP F-181(23)

Dear Sir:

All contract work deficiencies set forth on Federal Highway Administration Reports 14 and 15 have been resolved with the contractor by Price Agreements. The work under Contract No. 7289, Saddle Mountain Junction-Little North Fork Nehalem River Section of the Sunset Highway in Clatsop County, was completed on December 10, 1970.

We request that your office inspect and contract work and return two signed copies of this letter indicating acceptance or listing below any items or conditions of the contract which would prevent your final acceptance of the contract work.

Very truly yours,

R. L. Porter
State Highway Engineer

RECEIVED
APR 26 1971
OFFICE OF
STATE HIGHWAY ENGINEER

By

F. D. Morgan
Construction Engineer

Federal Highway Administration
Oregon Division Office Endorsement Date 4/22/71

Conditions acted on above date:

Based on the following Price Agreements no further conditions remain which would prevent our final acceptance of the contract work:
PA #7 - Reduction of $2000 for unsatisfactory longitudinal joints
PA #8 - Reduction of $781 for low compaction in AC pavement
PA #9 - Reduction of $[illegible]986.44 for nonspec. gradation and moisture in AC base and pavement.

R. E. Simpson
Division Engineer

VG:fw
cc R. L. Porter
F. D. Morgan
LPR:bk

cy Morgan 4-28-71

RECEIVED
APR 12 1971
FOR FILING

F-181(23)
7289

OREGON STATE HIGHWAY DIVISION
INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
April 5, 1971

To: MEMO TO THE FILES

SUBJECT: Saddle Mtn. Jct.-Little North Fork Nehalem River Section
Sunset Highway
Contract No. 7289 - FAP F-181(23)
Non-specification Materials and Construction Deficiencies

NOTED
A. E. JOHNSON

Federal Highway Administration Construction Inspection Reports Nos. 14 and 15 listed deficiencies in the construction and materials specification requirements which resulted in suspension of Federal participation in this project. Resolution of these deficiencies has been made as noted:

Federal Highway Administration Construction Inspection Report No. 14

Item Nos. 1, 2 and 3 - Excess moisture, gradation, and asphalt content deficiencies noted for the bituminous base and Class "B" A. C. have resulted in reduction in price in the amount of $6,986.44. This is documented on Price Agreement No. 9. Supplementary documentation regarding this determination is contained in Mr. Wilson's letter of R. D. Asburry dated December 15, 1970.

Item No. 4 - The low compaction results would have normally been covered by the liquidated damage reduction clause contained in the Supplemental Standard Specifications for this project. Documentation of the reduction on this project, however, has been made on Price Agreement No. 8 in the amount of $781.

Item No. 5 - The discrepancies in the Sand Equivalent test results obtained in the field during production and those obtained at the laboratory on the record samples are explained in Mr. G. W. Wimer's letter of December 16, 1970 to F. D. Morgan.

Federal Highway Administration Construction Inspection Report No. 15

Item Nos. 1, 2 and 3 - Minor guardrail adjustments, general cleanup, installation of sign posts, and re-shaping and rolling of shoulder rock have been completed.

Item 4 - Explanation of variation of typical waterway section under structure between that shown on plans and as constructed is explained in Mr. G. W. Wimer's letter of January 8, 1971 to F. D. Morgan, attached hereto, along with enclosures from Vernon Shull and Lowell Stratton. Five-line profile with field notes is being submitted to Ted Boehme for inclusion with other final recores.

Item No. 5 - Correction of the longitudinal joints will be performed by State forces when satisfactory weather permits this spring. The cost of performing this work is $2,000 and will be at the contractor's expense as documented by Price Agreement No. 7.

This should satisfactorily resolve the Federal Highway Administration objections to acceptance of this project and restoration of their participation.

M. D. Glenn
Quality Control Engineer

MDG:fw

cc: A. E. Johnson
V. E. Skoog
John Jenkins
R. D. Asburry

RECEIVED
APR 6 '71
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
MAR 22 1971
FOR FILING

F-181(03)
7289

March 19, 1971

Paint-A-Line, Inc.
9900 Empire Way South
Seattle, Washington 98118

Attention: Auden L. Sherberg

Gentlemen:

Thank you for your letter of March 16 informing us that your claim against Roy L. Houck Sons' Corporation in the amount of $1,863.84 has been paid.

This appears to be in reference to the Roy L. Houck Sons' Corporation Contract No. 7289 for work on the Saddle Mountain Junction-Little North Fork Nehalem River section of the Sunset Highway in Clatsop County.

This information will be noted in our records, and we will advise the surety and the principal contractor that your claim has been paid.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

By
C. W. Heed, Assistant Secretary

C H:dr

cc The Aetna Casualty & Surety Company
Updegraff Insurance, Inc.
Roy L. Houck Sons' Corporation

bc Commission

NOTED ON CARD
3-19-71 dw.

5900 EMPIRE WAY SOUTH

PHONE PA 3-1419

PAINT - A - LINE, INC.

PARKING LOT MAINTENANCE

STRIPING CURBING ASPHALT PATCHING

SEATTLE, WASHINGTON 98118

March 16, 1971

Oregon State Highway Division
Highway Building
Salem, Oregon 97310

Attn: Floyd Query

Dear Mr. Query:

Reference; State Contract No. # 7289, Saddle Mtn. Jct.-
Little N. FOrk Nehalem River Section of the
Sunset Highway in Clatsop County.

This letter will inform you that the Contractor, Roy L. Houck Sons' Corporation has paid this claim of $ 1,863.84.

Thank you for you help in this matter.

Sincerely yours,

Paint-A-Line, Inc.
5900 Empire Way South

Auden L. Sherberg
Vice-President

ALS:mb

RECEIVED
MAR 18
OREGON
STATE HIGHWAY COMMISSION

NOTED
C. W. HEAD

RECEIVED
FEB 12 1971

FOR FILING
F-181(23)
7289

OREGON STATE HIGHWAY DIVISION
INTER-DEPARTMENT CORRESPONDENCE

NOTED
A. E. JOHNSON

Salem, Oregon
February 8, 1971

To:
Mr. R. D. Asburry
Region Engineer
East Salem Highway Building

ATTENTION: Mr. G. W. Wimer

SUBJECT: Saddle Mtn.-Little North Fork
Nehalem River
Contract No. 7289
Reduction in Price for
Non-specification AC Mixture

Per your letter of December 16, 1970 and our meeting of January 29, 1971, a determination of the reduction in price for acceptance of the non-specification Plant-Mix Bituminous Base and Class "B" Asphalt Concrete Mixtures incorporated into this project has been made.

Our standard procedure for determination of the maximum quantities of non-spec material allowable for reasonably close conformance was followed. The reduction in price for the quantities in excess of this amount was based on our standard practice of determining the equivalent tons of mixture represented by gradation deficiencies at the bid price per ton of mix. When the only deficiency was in the amount of asphalt, the quantity of asphalt represented by the deficiency at the bid for the asphalt was used. The reduction in price for materials with excess moisture only was based on a cost of $0.07/ton/one-tenth% of excess moisture. This has been determined to be the average cost to the contractors on other projects to remove the excess moisture. On those days when mix was produced which contained less than 6.2 percent asphalt and an excess of moisture, a reduction of 10 percent of the cost of the mixture including the cost of the asphalt in the mix was used in compliance with J. E. Wilson's recommendations of December 15, 1970. This reduction averages $0.72 per ton of mix. Deficiencies in gradation were not considered on those days.

A total reduction in price in the amount of $7,767.44 is recommended. This includes $718.00 for the low compaction results obtained. It does not include the $2,000 Price Agreement submitted to the contractor for correction of poor longitudinal joints.

PLANT-MIX BITUMINOUS BASE

Date	Tons Mix	Tons Dry Mix	Deficiency	Tons Out	Reduction	Amount
9-17 to 9-30	Not considered. In reasonably close conformance.					

BP*52678-734

Date	Tons Mix	Tons Dry Mix	Deficiency	Tons Out	Reduction	Amount
10-5	2,95 .56		-0.7% Asphalt	20.42	$31.50	$ 643.23
10-8	1,863.41		+0.3% Moisture		0.21	391.32
						$1,034.45

CLASS "B" A.C.

(* Days with low asphalt content and excess moisture subject to 10% reduction)

Date	Tons Mix	Tons Dry Mix	Deficiency	Tons Out	Reduction	Amount
10-9 to						
10-14	832.14	Tons not considered				
10-14	883.41		+0.2 Moisture	883.41	$ 0.14	$ 123.68
10-15	2,100.06		+0.1 Moisture	2,100.06	0.07	147.00
10-19	1,025.22	958.58	+4.1% 3/4"-1/4"	39.30	5.45	214.19
			-1.1% 1/4"#10	10.54	5.45	57.44
			+0.1% Moisture	1,025.22	0.07	71.76
10-20 *	921.53		-0.7% Asphalt			
			+0.2% Moisture	921.53	0.72	663.50
10-21 *	704.67		-0.3% Asphalt			
			+0.2% Moisture	704.67	0.73	514.41
			-0.8% #10-0			
10-26 *	1,762.17		-0.5% Asphalt			
			+0.5% Moisture	1,762.17	0.72	1,268.76
			+4.0% 3/4"-1/4"			
			-0.1% 1/4"-#10			
			-0.3% #10-0			
10-27 *	2,013.24		-0.2% Asphalt			
			+0.3% Moisture	2,013.24	0.73	1,469.66
			+2.5% 3/4"-1/4"			
			-0.4% #10-0			
10-28	1,208.13		+0.5% Moisture	1,208.13	0.35	422.85
10-29 *	846.97		-0.3% Asphalt			
			+0.4% Moisture	846.97	0.73	618.29
11-2	2,576.81		+0.1% Moisture	2,576.81	0.07	180.33
11-3	387.37	359.87	+0.1% 1/4"-#10	0.36	5.45	1.96
			- 0.4%#10-0	1.44	"	7.85
11-4	648.69	601.98	+3.8% 3/4"-1/4"	22.87	5.45	124.64
			-2.0% #10-0	12.04	"	65.62
11-5	297.89		No tests			
						$5,951.99

SUMMARY

Reduction in price - PMBB	$1,034.45	
Reduction in price - Class "B"	5,951.99	$6,986.44
Liquidated Damages - Low Compaction		781.00
Total reductionfor non-specification materials		$7,767.44

It is recommended that your office process a Price Agreement with the contractor, Roy L. Houck Sons' Corporation in the amount of $6,986.44 inasmuch as the Resident Engineer has moved to another Region and the contractor's office is located in Salem. As this contract is under the 1964 Specifications, the reduction for low compaction is considered a liquidated damage item and this reduction is to be listed as such on the semi-final estimate.

F. D. Morgan
Construction Engineer

By M. D. Glenn

M. D. Glenn
Quality Control Engineer

MDG:fw

cc: A. E. Johnson
John Jenkins
F. D. Morgan
L. H. Young

RECEIVED
FEB 9 1971
OFFICE OF
STATE HIGHWAY ENGINEER

FORM E-20

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
December 16, 1970

To: F. D. Morgan
CONSTRUCTION ENGINEER

SUBJECT: Specification Deficiencies
Saddle Mountain Junction
Sunset Highway
Contract 7289

Glenn Hossner, Lyle Renz and Hal Weirenga and all of the FHWA met with R. D. Asburry, Tom Schott and the undersigned November 2, 1970. Their comments about the subject project with our observations follow.

(1) "What is the attitude of the Regional Office and Resident Engineer about shutting the contractor down for non-specification material? Also do the Resident Engineers consult this office to point out deficiencies and review proposed actions?"

It is not the intention of this office and I'm sure of any of our Resident Engineers to allow unsuitable material to either be incorporated into the finished project or if it is unknowingly incorporated and subsequently found, to have it left in place. There are, of course, situations where borderline materials are incorporated. Frequently these are of such minor quantity that we can say the material substantially conforms to specifications. Other times this borderline quantity is too great and when this doesn't become known until the job is done and where not seriously detrimental these materials will be left in place with a price reduction. Where the quantity of failures are obvious, immediate action needs to be taken. This office will more strongly see to this in the future. Our Resident Engineers will also be so instructed. In particular they will have to (and they have) notify this office where specification conformance difficulties are encountered. This was done to a degree in this case. You obviously cannot expect a call after every test.

(2) "All 'check' tests and FHWA 'progress' samples on the 1 1/2"-0 Plant Mix Stone Base failed the Sand Equivalent (SE) test."

Actually some of the tests Renz thought were "progress" were "final". These "finals" were:

Date	Lab. No.	Observer	Value
September 15, 1970	942194	Paul Hockett	25
September 15, 1970	942193	Paul Hockett	22
September 16, 1970	942328	Tom Schott	23
September 16, 1970	942329	Tom Schott	24

Although all of these values were below the required 40, we needn't be alarmed. The course was but 5 1/2 - inches thick. It was applied late in the season. A minor intrusion of the sub-grade material is to be expected. It did occur. In some localized areas it was so great as to require removal. See an earlier report to you.

The 'check' and 'progress' results were:

Date	Lab. No.	Observer	Lab Value	Field Inspector	Field Value
September 5, 1970	241255	Check	32	Jerry Warden	34
September 15, 1970	942196	P. Hockett	36	R. Gabel	
September 16, 1970	942330	Tom Schott	46	R. Gabel	

When the check sample was taken September 4 the materials being produced were not satisfactory and 815 cubic yards were "--rejected pushed aside and used on hot plant floor and access way. /s/ R.Gabel" The check was favorable:

Single Sieve Retention		Lab	Field	Spec
Retained	1 1/2"	0	0	0-10
"	3/4"	21	27	20-40
"	1/2"	13	10	
"	1/4"	21	14	
Pass	1/4"	45	49	35-50
Retained	#10	26	25	
Pass	#10	19	24	
	1/4"-10# in 1/4"-0	55	51	42-58

A check sample wasn't taken simultaneously with the September 15 progress sample. So we speculate. Of the 23 field SE tests on the 1 1/2"-0 material, 21 were 40 or above and of these 10 were 45 or above. Of the 2 actually below 40, one of these represented but 50 cubic yards. The other represented 405 cubic yards of the 815 wasted September 4. This indicates material just at or above specification. A pocket of slightly poorer grade material could account for the small deviation this September 15 sample, and for that matter, the two field failures, was from specification.

The September 16 sample met specifications and was practically coincidental to field result of 45 earlier that day.

Our sample submittal procedures have been questioned as possible basis for the September 15, 1970 variation. A water proof container has been used on subsequent stockpile floor check samples with the following results:

Date	Lab. No.	Observer	Lab Value	Field Inspector	Field Value
November 6 & 9, 1970	949334	Tom Schott	26	Ron Gabel	25.7
November 6 & 9, 1970	949335	Tom Schott	26	Ron Gabel	23.8
November 6 & 9, 1970	949336	Tom Schott	25	Ron Gabel	28.3
November 6 & 9, 1970	949337	Tom Schott	23	Ron Gabel	33.8

These are good check samples except for the last one. However they do not show if there is a variance between water proof and non waterproof shipments as do the following:

Date	Lab. No.	Sampler	Method	Lab Value
November 23, 1970	951410 (1A)	Tom Schott	Plastic bag	21
November 23, 1970	951412 (1B)	Tom Schott	Canvas bag	27
November 23, 1970	951411 (2A)	Tom Schott	Plastic bag	22
November 23, 1970	951413 (2B)	Tom Schott	Canvas bag	26

These results are just converse of those expected. The only explanation is the plastic sweats whereas the canvas may hold some of the extremely fine particles.

So we must rely on the first six paragraphs on this item in way of explanation.

(3) "There is excessive moisture in the Asphaltic Concrete (AC)."

This did not become a problem until near the end of the Plant Mix Bituminous Base (PMBB). See my October 8 and 9 memos to Ray Asburry. Copies are attached. Please note the contractor was shut down early October 7 by Vern Shull after only one day of not conforming to this specification.

This office didn't have the opportunity the following two weeks to give this project close attention. We were generally aware of the situation and concurred with completing the project providing reasonable conformance was obtained. Our main reasons for this were: (1) Not carrying the job into a third summer. (2) Not having a partially completed surface over the winter. This reason had been lessened with completion of the PMBB. (3) There were no moisture boils showing. Also a specification was being considered in your office to allow a slight increase in allowable moisture limits.

Vern Shull did tell the contractor of his responsibilities in proceeding without fully conforming to this specification. See his attached memorandum. Also attached are two tabulations of the moisture contents and a graph of all aspects of the AC testing.

Retained strength tests have been conducted at the higher moisture contents. Jim Wilson's attached December 15 report indicates retained strengths below the designed 70 with 0.7 moisture and asphalt contents below 6.2. His opinion indicates this combination yield a 1.8 CBE or 10 per cent loss. This would apply to the first 5 days of the top course paving. A direct penalty in this amount would be a possibility. It shouldn't be doubled up with a drying penalty on this same material.

It is appropriate a penalty be assessed at least equal to the costs the contractor saved in not drying this material. John Walker has previously indicated he would have Ed Johnsen determine such a value. This value and guidelines as to its application would be appreciated.

(4) "The Asphalt content of the AC is low."

Aggregate production was started so late (September 5, 1970) that the mix design was based on production prior to September 10. It was not a representative sample of the subsequently produced material which had far more passing the 200 screen. Prior to September 15 the 6,487 CY incorporated had an unweighted 2.2 per cent passing 200 whereas the remainder of the 27,266 CY incorporated through October 12 had 5.5 per cent for an overall 4.4 per cent average. A far lesser asphalt content would have been appropriate for a truly representative sample. So we have the following mix designs from this same pit:

Project	Design Source	Base	Top	Remarks
Tolovana	Lab	7.2	6.7	Average to 7.0
Nehalem Bay	Lab	7.2	6.7	Average to 7.0
Del Rey Beach	Lab	7.2	6.7	
Saddle Mountain	Lab	6.0		Bituminous Base
Saddle Mountain	Lab	7.2	6.7	
Saddle Mountain	McDonald	6.7	6.7	Specified on Field reports
Saddle Mountain	Lab	7.0	6.3	Determined after completion

With materials for Tolovana, Nehalem Bay, and Del Rey Beach scheduled to one at a time be obtained from Houck's plant at the same time he was making PMBB, base course AC, and/or top course AC, I suggested to Shull October 6 some consolidation of mix designs with respect to asphalt content. In particular I said that while base course AC was being made for Saddle Mountain the same mix, hopefully all about 0.1 below design mix, would be acceptable in the Parks. And when top course AC was being made for Saddle Mountain the same mix could again be used, hopefully about 0.1 above mix design.

It was obvious later that day to both Shull and I from the start of the Tolovana paving there was too much asphalt in the Park mix. When it was on the high side, asphalt simply ran or flowed out of the mix. He had to cut it back. It is a good thing he did or we would have less voids after recompaction than the 2.2 per cent 17 samples of the base course average. This compares to the design of 4.0. Fifteen top course samples averaged 3.2 per cent voids compared to a designed 5.1. Neither course had a void content in excess of the design except core 77 which was also thin in thickness. Also core 80 was high in voids.

The preceeding three paragraphs confirm that it was a good thing the asphalt content was reduced in the field. Next question is, "Did we reduce it far enough?" Robert McDonald, Regional Plant Inspector temporarily assigned to this project states, "By maintaining the same 1/4-10, 10-0 ratio we felt we would not have to (further) change the Asphalt content." McDonald is our most experienced plant inspector and he should have been able to recognize the problem if anyone could. He didn't at the time further reduce the asphalt in his mix design as he should have to reflect the fact he kept as much asphalt in the actual mix as it would stand without bleeding. The new mix design bears this actual reduction of asphalt content out and we should adjust to it before applying any penalty. The last three days should have a higher asphalt content as it was for curbs and approaches.

(5) "There are poor longitudinal joints." This again brought to John Walker and my attention November 16. See my report of November 17. There will be follow up reports.

In summation, there are some non-specification materials incorporated into this project. They are all in the AC involving moisture, rock gradation and asphalt. A penalty for each is in order. Please advise a rate for the moisture including strength

and guidelines for the gradation and asphalt. It is assumed they will be the same as other projects. The data should then be returned for computation by Shull. A copy of this report should be given Renz.

R. D. Asburry
REGIONAL ENGINEER

by

Gerald W. Wimer
REGIONAL CONSTRUCTION ENGINEER

GWW/jc

Attachs.

cc: Vern Shull

Listing of Attachments:

October 8 memo to R. D. Asburry
October 9 memo to R. D. Asburry
December 15 memo from Jim Wilson
Tabulations of Moisture Content
Graph of AC Testing
Memorandum from Vern Shull

Report of November 17 not attached

RECEIVED
FEB 8 - 1971
FOR FILING

F-181(23)

7289

February 5, 1971

Riddlesberger, Pedersen, Young and Kern
Attorneys at Law
1170 Pearl Street
Eugene, Oregon 97401

Attention: Phil Cano, Jr.

Gentlemen:

This is to acknowledge receipt of your letter of February 2, addressed to the Secretary of State and to the Secretary of the Oregon State Highway Commission, with attached Notice of Claim of Morse Bros., Inc., stating that Ray L. Houck Sons' Corporation owes them for prestress concrete material in the amount of $3,070.

As stated in the claim, this appears to be in reference to the Ray L. Houck Sons' Corporation Contract No. 7215 for work on the N. Fork Coquille River (Myrtle Point) Bridge Section of the Coos Bay-Roseburg Highway in Coos County.

We also acknowledge receipt of Morse Bros. Inc.'s claim for prestress concrete material in the amount of $16,230 against Ray L. Houck Sons' Corporation.

This appears to be in connection with the Ray L. Houck Sons' Corporation Contract No. 7289 for work on the Saddle Mountain Junction-Little North Fork Nehalem River Section of the Sunset Highway in Clatsop County.

The Aetna Casualty and Surety Company through Updegraff Insurance, Inc., 776 Commercial Street, S.E., Salem, furnished the performance bonds on these contracts. We will advise them of the receipt of these claims and we will also forward them to the Secretary of State for filing.

Please advise this office when these claims have been paid.

Very truly yours,

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

By
C. W. Read, Assistant Secretary

CWR:fm

cc The Aetna Casualty and Surety Company
Updegraff Insurance, Inc.
May L. Houck Sons' Corporation

Commission

Hon. Clay Myers - Please acknowledge receipt of the attached claims on the enclosed copy of this letter.

MAILED ON DATE
2-5-71 fm

W. P. RIDDLESBARGER
L. D. PEDERSON
LEO F. YOUNG
JOHN H. HORN
PHIL CASS, JR.
MALCOLM H. SCOTT
ROBERT D. WOODS
EDWARD J. LEWIS

RIDDLESBARGER, PEDERSON, YOUNG & HORN
ATTORNEYS AT LAW
CASCADE BUILDING - 1170 PEARL STREET
EUGENE, OREGON 97401

THOMAS E. BROWNHILL
OF COUNSEL

TELEPHONE 342-3691
AREA CODE 503

February 2, 1971

Secretary of State
Salem, Oregon 97310

Secretary, Oregon State Highway
Commission
State Highway Building
Salem, Oregon 97310

Re: Claims of Morse Bros., Inc.
Contractor: Roy L. Houck Sons Corp.
Surety: Aenta Casualty & Surety Co.
Jobs: North Fork Coquille River
No. 7215; Necanicum River Bridge
No. 7289

Gentlemen:

Enclosed please find notices of claim from Morse Bros., Inc. on the above projects.

Very truly yours,

Phil Cass, Jr.

PC:maj

cc: Aetna Casualty & Surety Co.
Morse Bros., Inc.

RECEIVED
FEB 1 - 1971
OREGON
STATE HIGHWAY COMMISSION

NOTICE OF CLAIM

TO: State of Oregon
Oregon State Highway Commission

Notice is hereby given that the undersigned, Morse Bros., Inc., has a claim for prestress concrete material in the sum of $16,250 furnished by claimant against the bond taken from Roy L. Houck Sons Corporation as principal and Aetna Casualty and Surety Co. as surety for the work of Necanicum River Ridge, Contract No. 7289.

MORSE BROS., INC.

By J L Morse

RECEIVED
FEB 4 - 1971
OREGON
STATE HIGHWAY COMMISSION

RECEIVED
FEB 11 197
FOR FILING

4578

FILED
FEB - 5 1971
LAY MYERS
SECRETARY OF STATE

NOTED ON CARD
2-10-71 RL

OREGON STATE HIGHWAY DIVISION

7289

HIGHWAY BUILDING • SALEM, OREGON • 97310

February 4, 1971

Paint-A-Line, Inc.
5900 Empire Way South
Seattle, Washington 98118

Attention: Auden L. Sherberg

Gentlemen:

This is in reply to your letter of January 29, 1971, informing us that Roy L. Houck Sons' Corporation owes you the sum of $1,863.84 for the installation of 3,072 linear feet of extruded asphalt curb.

This appears to be in reference to the Roy L. Houck Sons' Corporation Contract No. 7289 for work on the Saddle Mtn. Jct.-Little N. Fork Nehalem River Section of the Sunset Highway in Clatsop County.

The Aetna Casualty & Surety Company through Updegraff Insurance, Inc., 776 Commercial Street, S. E., Salem, furnished the performance bond on this contract. We will advise them of the receipt of your claim letter, and we will also forward it to the Secretary of State for filing.

Please advise this office when your claim has been paid.

Very truly yours,

FLOYD QUERY

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

cc Roy L. Houck Sons' Corp.
P. O. Box 7381
Salem, Oregon 97308

Updegraff Insurance, Inc.
776 Commercial Street, S. E.
Salem, Oregon 97301

The Aetna Casualty & Surety Co.
Bond Department
1201 S. W. 12th
Portland, Oregon 97205

RECEIVED
FEB 8 - 1971
OREGON
STATE HIGHWAY COMMISSION

NOTED
C. W. HEAD

bc Secretary of State - Please acknowledge receipt of the attached claim on the enclosed copy of this letter.

5900 EMPIRE WAY SOUTH

PHONE PA 3-1418

PAINT - A - LINE, INC.

PARKING LOT MAINTENANCE

STRIPING CURBING ASPHALT PATCHING

SEATTLE, WASHINGTON 98118

January 29, 1971

State Highway Department
Salem, Oregon

Subject: Paint-A-Line,Inc., Sub Contractor to Roy L. Houck Sons Corp. State Contract # 7289 Clatsop County, Saddle Mountain to Little North Fork River.

Gentlemen:

Notice is hereby given that the undersigned, Paint-A-Line,Inc. has a claim in the sum of $ 1,863.84 against the bond taken from Roy L. Houck Sons Corporation and their surety the Etna Casualty Insurance Company for work which we have done described as follows:

Installation of 3,072 linear feet of extruded asphalt curb.

Notice is further hereby given that Paint-A-Line, Inc. has a claim for said sum against the sums retained by the State of Oregon as a trust fund for the protection and payment of material, men, and subcontractors.

Kindly advise us as to any other procedure necessary to perfect our claim under these circumstances. If you need further information please let us know.

Dated this 29th day of January, 1971

Paint-A-Line,Inc.
5900 Empire Way South
Seattle, Washington 98118

Auden L. Sherberg
Vice-President

ALS:mb

NOTED
FLOYD QUERY
2-2-71

NOTED
C. W. HEAD

RECEIVED
MAR 9 - 1971

FOR FILING
F-181(2)
7274

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
January 22, 1971

SUBJECT: Construction Engineering Costs

To:

Mr. A. E. Johnson
Assistant State Highway Engineer
BUILDING

Your December 22 letter requested explanation of engineering overruns on three projects. Attached are the responses from the two Regions involved to which we would add the following comments:

CONTRACT NO. 7089 - MILWAUKIE-HARMONY ROAD INTERCHANGE SECTION

This project was unique in that it included complete landscaping. This is ordinarily handled as a separate contract. The completion of establishment and final acceptance of all work on this project was only done on January 6, 1971.

The grading on this project was well along when the extreme rains in the last half of August, 1968 occurred. This was a key factor on the time extension request, and we had to acknowledge that the intensity of the rainfall at that unusual time justified extension. This threw completion of the grading and starting of the landscaping into another season. The landscaping was further complicated by a significant addition to it to extend it to the north along Millport Road by Price Agreement No. 5. This was partly a public relations move to get some new landscaping treatment going where it could be preserved behind the trees that will have to be removed in the future.

CONTRACT NO. 7338 - DIVISION ST.-HILDA STREET SECTION

We are holding 63 days liquidated damages in the amount of $6,300 (which equals 60 percent of the engineering overrun) on this project for late completion. We do not yet have a request for extension. I am not aware of any reasons for substantial extension and, at this point, would assume that a significant amount of these liquidated damages will be retained.

CONTRACT NO. 7289, SADDLE MTN. JCT.-LITTLE N. FORK NEHALEM RIVER

We are holding $13,100 (which equals almost half of the present engineering overrun) in time liquidated damages on this project. The contractor is preparing a request for extension and has discussed it only very briefly with us.

SP 82479-734

I am sure he is going to make a diligent effort to recover most of this money and there are probably some reasons that justify some extension, but I am doubtful that we will recommend complete extension.

F. D. Morgan
Construction Engineer

By

John A. Bond
Construction Administration Engineer

JAB:fw

Attach.

RECEIVED
JAN 23 1971
OFFICE OF
STATE HIGHWAY ENGINEER

RECEIVED
FEB 13 1971
FOR FILING

OREGON STATE HIGHWAY DIVISION

F-181(23)

HIGHWAY BUILDING • SALEM, OREGON • 97310

TOM McCALL
GOVERNOR

7289

January 11, 1971

Mr. R. E. Simpson
Division Engineer
Federal Highway Administration
P. O. Box 300
Salem, Oregon 97308

Contract 7289
Prefix 4-1004
FAP F-181(23)

NOTED
A. E. JOHNSON

Dear Sir:

All work under Contract No. 7289, Saddle Mountain Junction-Little North Fork Nehalem River Section of the Sunset Highway in Clatsop County, was completed on December 10, 1970.

We request that your office inspect the contract work and return two signed copies of this letter indicating acceptance or listing below any items or conditions of the contract which would prevent your final acceptance of the contract work.

Very truly yours,

R. L. Porter
State Highway Engineer

RECEIVED
FEB 11 1971
OFFICE OF
STATE HIGHWAY ENGINEER

By

F. D. Morgan
Construction Engineer

copy to Morgan 2-12-71

Federal Highway Administration
Oregon Division Office Endorsement Date February 9, 1971

Conditions noted on above date: A final inspection was made on 1-19-71. The specification deviances for the surfacing materials, as set forth in Inspection Report No. 14, and the paving panel joint deficiencies, as set forth in Inspection Report No. 15, will have to be satisfactorily resolved before final acceptance of the contract work can be given. All other items noted on Inspection Report No. 15 have been resolved.

for R. E. Simpson
Division Engineer
G. K. Hansen

ROUTE TO JOM

LFR:js
VG:fw
cc R. L. Porter
F. D. Morgan

F-181(23)
7289

FORM E-1 (REV 10-69)

OREGON STATE HIGHWAY DIVISION

FIELD ENGINEER'S WEEKLY REPORT

FOR CONSTRUCTION PROJECTS ONLY
CONSTRUCTION AND BRIDGE SECTION

SECTION: SADDLE MTN. JCT. - LITTLE N. FK. NEHALEM RIVER SECTION		WEEK ENDING: January 9, 1971
		SECTION PREFIX: 4-1004
HIGHWAY: Sunset		COUNTY: Clatsop
NAME OF JOB: SADDLE MT. JCT.- LITTLE N. FK. NEHALEM R.		KIND OF WORK: Grading, Paving & Structure
CONTRACTOR: Roy L. Houck Sons' Corp.	CONTRACT NUMBER: 7289	FEDERAL AID PROJECT NUMBER: F-181(23)
DATE OF CONTRACT: August 21, 1969	DATE WORK STARTED: August 18, 1969	ESTIMATED COMPLETION DATE:
AVERAGE FORCE ON PROJECT FOR THE WEEK: MEN: SUPERVISION:	SPECIFIED WORK DAYS: CWD	WORK DAYS USED
	SPECIFIED CALENDAR DAYS a. 280 b. 310	CALENDAR DAYS USED a. 329 b. 354
	SPECIFIED COMPLETION DATE	PERCENT OF TIME ELAPSED: a. 117.5 b. 113.8
PROJECT AUTHORIZATION: $1,449,116.43		PERCENT OF CONTRACT COMPLETED BASED ON ESTIMATED COST: 100
EXCLUSIVE OF ENGINEERING: $1,346,068.15	ENGINEERING AUTHORIZATION $103,048.28	
ESTIMATED COST OF COMPLETED PROJECT, EXCLUSIVE OF ENGINEERING: $1,364,851.41	ENGINEERING COST TO DATE $130,000.00	PERCENT OF CONTRACT COMPLETED BASED ON TOTAL AUTHORIZATION: 102
ESTIMATED PERCENT: OVERRUN / UNDERRUN 1.5 %	PERCENT OF AUTHORIZATION 126.2 %	DATE PROJECT WAS COMPLETED: a. 11-5-70 b. 12-10-70

ESTIMATED PERCENT COMPLETE (ROADWORK)

CLEARING	DRAINAGE	GRADING	BASE	OIL AND/OR PAVE.	MAT'L. PROD.		
100	100	100	100	100			

	GRADING	SURFACING	MAINTENANCE MATERIALS	OIL & BITUMINOUS MACADAM	PAVING
MILES IN PROJECT	2.48	2.48			2.48
MILES PARTIALLY COMPLETED					
MILES COMPLETED	2.48	2.48			2.48
TOTAL ESTIMATED QUANTITIES (CONTRACT)	458,300 cy	57,200 ton			20,900 ton
TOTAL QUANTITIES CORRECTED TO DATE	526,000	57,550			19,736
ESTIMATED QUANTITIES MOVED OR PLACED TO DATE	526,000	57,550			19,736
AVERAGE DAILY QUANTITIES					
AVERAGE DAILY QUANTITIES NECESSARY TO COMPLETE PROJECT ON TIME					
NUMBER OF SHIFTS PER DAY					
HOURS PER SHIFT					

EQUIPMENT USED DURING THE WEEK:

ESTIMATED PERCENT COMPLETE (STRUCTURES)

BRIDGE NO.	1812A							
PERCENT	100							

	WEATHER	WORK DAYS CHARGED	HOURS DELAY	CAUSE OF DELAY
SUNDAY				
MONDAY				
TUESDAY				
WEDNESDAY				
THURSDAY				
FRIDAY				
SATURDAY				

Routing
Morgan
Parks
Decker
Bond
RECEIVED
Walker
JAN 11 1971
Boehme
Johnsen
CONSTRUCTION DIVISION

BEN GIFFORD

GENERAL DESCRIPTION OF ACTIVITIES FOR THE WEEK

SUNDAY Jan. 3, 1971	
MONDAY	
TUESDAY	
WEDNESDAY	
THURSDAY	
FRIDAY	
SATURDAY	

REMARKS

No work on Semi-Final this week.

SIGNED Vernon E. Skull LOCATION Brookings

PRIME RESIDENT SUBMIT 2 COPIES. WHEN BRIDGES AND GRADING BOTH ARE INVOLVED, SUBMIT 3 COPIES.

SP-F216

RECEIVED
MAR 9 - 1971
FOR FILING

F-181(23)
7179

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
January 7, 1971

To: F. D. Morgan
CONSTRUCTION ENGINEER

SUBJECT: Over-run Engineering Costs
Saddle Mountain Junction
Little North Fork - Nehalem River
Contract No. 7289
Prefix 4-1004

Pursuant to your letter of December 23, 1970 regarding the subject matter, we have had Resident Engineer Shull give us a report from his office regarding this matter. Attached is a copy of his report.

As indicated in this report there were some special additional costs in the way of per diem expenses etc., but the primary reason for the over-run of engineering cost was in the actual progress of the contract work itself. As you know, the contract overran in time which increases engineering cost and also the low production of some of the contract work increased the overall cost. As for the matter of production, the same amount of engineering has to be paid per day whether production is low or high.

R. D. Asburry
REGIONAL ENGINEER

RDA/jc

Attach.

Routing
Morgan
Becker
Bond
Walker
Peaco
Swan
Glenn
CONSTRUCTION DIVISION

FORM E-20 (4-70) BP*52503-734

OREGON STATE HIGHWAY DIVISION

INTER-DEPARTMENT CORRESPONDENCE

Brookings, Oregon
January 5, 1971

To: Mr. R.D. Asburry
Region Engineer
Salem, Oregon

SUBJECT: Engineering Over-run
Saddle Mtn. Jct.-Little N.Fk. Nehalem R.
Contract No. 7289
Prefix 4-1004

The engineering over-run, this project was the result of several factors as follows:

A total of 15 men were transferred to Seaside for this project. This involved moving expenses plus moving allowance.

A total of $ 2,200 was paid in Per Diem for borrowed personnel.

A total of $2,500 in expenses was paid for borrowed personnel on Expense Account.

A total of $ 5,330 was paid in Lab Charges.

The contractors operations ran us into considerable overtime throughout the project. Weather permitting they worked long shifts rather than double shifts excepting part of the grading and part of the crushing. Also the contractors low production rate (due to continual breakdowns) resulted in more man-days than should have been required in that inspectors would put in 10 to 12 hour days with very little production.

The Contractors Over-run in time reflects the same amount of time that my crew was required to be on this project.

Primarily our heaviest expenses were incurred during the surfacing operations and if the contractor would have completed on time it would have reflected in Engineering Costs as I was geared up on schedule and had to maintain the necessary personnel until the surfacing was finally completed.

Vernon E. Shull

Vernon E. Shull
Resident Engineer

RECEIVED
MAR 9 - 1971
FOR FILING

F-181(23)
7284

Salem, Oregon
December 22, 1970

Construction Engineering Cost.

F. D. Morgan
Construction Engineer

BUILDING

On the weekly reports for the week ending December 18, for the projects listed below I note the percent of authorization of engineering costs expended as follows:

Milwaukie-Harmony Road Interchange
Contract No. 7089
155.4%

Division St.-Hilda St.
Contract No. 7338
144%

Saddle Mtn.Jct.-Little N. Fk. Nehalem River
Contract No. 7289
124.2%

In view of the size of these projects, the amounts of expenditures for engineering costs appear to be exorbitant. Please request an explanation of overruns from the particular Regional Engineers and submit a report.

A. E. Johnson
Assistant State Highway Engineer

AEJ:ns

DF 12 8 70

FORM PR-1368 10 1970
(7-67)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

FEDERAL-AID PRE-AUDIT INELIGIBILITY NOTIFICATION
NO. 35-70-FIN-72

STATE	COUNTY
F-181(23) Oregon	Clatsop
F. A. PROJECT NO. 7289 F-181(23)	STATE CONTROL SECTION OR PROJECT NO. Saddle Mt. Junction - Little N. Fork Nehalem River Section

TO: Mr. R. L. Porter, State Highway Engineer
Oregon State Highway Division
Salem, Oregon

1. OSHD (V.E. Skoog) ✓
2. OSHD (A.E. Johnson)
3. OSHD (F.D. Morgan)
4. OSHD (R.D. Asburry
5. Project File
6. Fiscal File
7. FIN File

ITEMS IDENTIFIED BELOW ☐ OR ON ATTACHED SHEET ☐ HAVE BEEN DETERMINED TO BE INELIGIBLE OR REQUIRE ADDITIONAL SUPPORT PRIOR TO FEDERAL-AID REIMBURSEMENT FOR THE REASONS STATED:

Refer to Area Engineer Ranz's Inspection Reports, 14 and 15, copies previously furnished you.

Further Federal participation suspended until satisfactory resolution of deficiencies.

12-9-70 ltr
Copy to
NOTED
F. B. KLABE

INELIGIBLE $ _____ (IF APPLICABLE)

THE ABOVE ITEMS (AS AMPLIFIED IN THE COVERING LETTER)* SHOULD NOT BE CLAIMED UNTIL CORRECTIVE ACTION HAS BEEN TAKEN AND SUPPORTING OR QUALIFYING DATA PLACED IN THE STATE'S FILE. IF THE STATE HAS ALREADY BEEN REIMBURSED, A CREDIT SHALL BE ENTERED ON THE NEXT CONSOLIDATED OR CURRENT BILLING SUBMISSION.

EXCEPTIONS DESCRIBED ON NOTIFICATION NO. _____ NOW ELIGIBLE.
REFERENCE:

REMARKS:

NOTED
TOM EDWARDS

RECEIVED
DEC 9 1970
OFFICE OF
STATE HIGHWAY ENGINEER

SIGNATURE	TITLE	DATE
Original signed by L. R. Backlund Admin. Manager L. R. Backlund	Administrative Manager	December 8, 1970

GPO 937-262

*STRIKEOVER IF NOT APPLICABLE

DATE
NOV 18 1970
FOR FILING

F-181 (23)
1289

November 17, 1970

131

Mr. R. E. Simpson, Division Engineer
Federal Highway Administration
Post Office Box 300
Salem, Oregon 97303

Dear Sir:

Re: Statewide Inspection-in-Depth
Field Testing Laboratory and
Equipment
Your Ref. 08-35-DA/439.1

We are pleased you found the field laboratories were generally adequately equipped to perform the required tests and the equipment in reasonably good condition. Consideration is being given to improving the deficiencies in the few items noted.

The checking and adjusting of the testing by the field inspectors will be covered in our forthcoming training sessions as will the necessity for documenting when the equipment has been checked for accuracy.

The use of the 1/4-cubic foot air entrainment buckets for checking the cement factor and unit weight of portland cement concrete was necessitated by the lack of scales in the field with sufficient capacity to use buckets with 1/2-cubic foot or larger volumes. The smaller volume buckets have, with few exceptions, proved adequate. The number of scales with sufficient capacity to weigh the larger volumes of concrete has increased substantially in the past year or so but is still not adequate during the peak construction periods. It is intended, therefore, to use the smaller buckets as an alternate method until such time as additional equipment is available.

Regarding the field laboratories furnished by the contractors, we are presently reviewing our specifications

for the minimum requirements to insure that adequate electricity, water, heat, and storage space is provided. The furnishing of State-owned laboratories is also being reviewed.

Very truly yours,

R. L. Porter
State Highway Engineer

By

A. E. Johnson
Assistant State Highway Engineer

cc R. L. Porter
Tom Edwards
F. D. Morgan

MDG:fw ms

Form FHWA-121 (12-67)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

Morgan — Routing — Jacker — and — Jones — Sloan — Gallagher — Main

RECEIVED
OCT 27 1970
CONSTRUCTION DIVISION

TO : Mr. R. L. Porter, State Highway Engineer
Salem, Oregon

DATE: October 13, 1970

In reply refer to: 08-35-DA/439.1

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Statewide Inspection-in-Depth
Field Testing Laboratory and Equipment

During this past summer our Area Engineers have inspected four projects for this phase of our Inspection-in-Depth program. The projects inspected were I-5-1(72)36, I-205-7(12)290, I-80N-6(42)256, and F-181(23).

You were furnished copies of the reports covering each inspection.

While the projects inspected were limited in number, our review indicated the project field laboratories met the minimum requirements, the projects were generally adequately equipped to perform the tests and the equipment was in reasonable, good condition. There were a few items noticed, however, that we believe will deserve your consideration.

1. There is no apparent record as to when or if some equipment is checked.

2. Some of the testing inspectors did not know how to check their equipment or to adjust it. This apparently is being left up to the Region Testing Engineer.

3. The buckets being used for checking the yield or unit weight of Portland cement concrete were the air entrainment meter buckets (¼ cubic foot) instead of the ½ or 1 cubic foot buckets specified on Page III 116 of your inspectors manual.

4. The quality of field laboratories furnished on the projects inspected did not appear commensurate with the bid prices. While the field laboratories met the specifications, they did not always have electricity, most of the time did not have water, had no heat or air conditioning, had inadequate ventilation and organized storage space, and were otherwise poorly arranged with respect to the testing necessary for the particular testing needs of the project.

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

Form FHWA-121 (12-67)

UNITED STATES GOVERNMENT

Memorandum

U. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Box 300
Salem OR 97308

F-181(23)

TO : Mr. R. L. Porter, State Highway Engineer
Salem, Oregon

DATE: November 10, 1970

In reply refer to: 08-35-DB/439.1

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

SUBJECT: Statewide Inspection-in-Depth
Construction Signing and Traffic Control

During the past construction season our Area Engineers inspected five projects on the subject phase of our inspection-in-depth program. The projects inspected were: I-80N-3(58)108 and I-80N-4(20)112, I-5-2(64)73, I-5-3(86)121, I-80N-6(42)256, F-181(23), and F RF-156(19). You have been furnished copies of the reports covering each inspection.

No significant deficiencies were found on this series of inspections. Our conclusion is that contract provisions for construction signing are generally quite thorough and are being applied on the project in a conscientious manner. You are encouraged to maintain the high standards you have set for the guidance of traffic through highway construction projects.

11-13-70
Copy to Mr. Smith

NOTED
TOM EDWARDS

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

RECEIVED
SEP 28 1970
FOR PLAN
F-181(23)
7289

INSPECTION NO. 3

CONSTRUCTION DEPARTMENT
INSPECTION REPORT

Name of Job Saddle Mountain Jct.-Little N. Fork Nehalem River Contract No. 7289

Highway Sunset

Contractor Roy L. Houck Sons' Corp. Date 9-16-70

____ Initial)
)
____ Intermediate)
)
____ Final)
)
XX Special)

Inspection Made by R. A. Nichols, FHWA
M. D. Glenn, OSHD
Vernon Shull, OSHD

G. W. Wimer, Ass't. Regional Engineer was on project but could not accompany us on the inspection due to a previous Committment.

NOTED
A. E. JOHNSON

REMARKS

This was the third inspection of a series on Field Sampling and Testing Procedures being made by the Federal Highway Administration. A check was made to see that all equipment was on hand to perform the required tests after which the condition of the equipment was made. The zero balance and accuracy of the three scales in the field lab were checked. Two were found to have minor deviations in accuracy from the check weights used. One triple beam balance which was not being used would not balance and was off 5 grams with the 295 gram check weight used. The volume of the Harvard mold had not been checked in the past 12 to 16 months.

The settings on the variable control on the oven had not been calibrated for temperatures. This, however, was being controlled by a thermometer. With the minor exceptions noted, the equipment was clean and in good working order. No testing was observed although personnel were questioned as to where and when S. E. tests were performed as the field laboratory was subject to considerable vibration from the nearby crushing equipment. Concrete testing equipment was not on project as no pours were being made. The Bridge Inspector was quizzed and appeared knowledgeable in the concrete testing area.

The field laboratory furnished by the contractor was a well built trailer with better than average facilities at a bid price of $1,000.

RECEIVED
SEP 23 1970
OFFICE OF
STATE HIGHWAY ENGINEER

cc: Div. Engr. R. D. Asburry
Res. Engr. Vernon Shull
A. E. Johnson
A. A. Rear

M. D. Glenn
Signed
M. D. Glenn, Quality Control Engineer

RECEIVED
SEP 10 1970
OFFICE OF
STATE HIGHWAY ENGINEER

F-161(23)
7289

STATE FILE COPY

Form [illegible]

OREGON STATE HIGHWAY DEPARTMENT

APPROVED EFFECTIVE DATE 8-31-70
Contingent upon modification of project agreement if additional funds are required
BY G. K. Hanson
Dist. Engineer

Order for Extra Work

TO BE PERFORMED ON FORCE ACCOUNT BASIS

DATE 8-19-70
Date
U. S. BUREAU OF PUBLIC ROADS

Project Name SADDLE MT. JCT.-LITTLE N. FK. NEHALEM R.

Highway Sunset

County Clatsop

Contractor Roy L. Houck Sons' Corp.

Address P.O. Box 7381, Salem, Ore. 97303

Contract No. 7289

Prefix 4-1004

F. A. Project No. F-161(23)

Order No. 1 (Supplement No. 1)

The following work is hereby classified as "Extra Work", to be performed and paid for in accordance with the terms of contract.

Description of work to be done:

Flagging Costs, State Share 50%

Location by station numbers:

Throughout Project

Estimate of quantities and cost:

Original Estimate, Flagging (State Share)	=	$ 15,000.00
Present Estimate, Flagging (State Share)	=	28,000.00
TOTAL ADDITIONAL COST		$ 13,000.00

Explanation: (Explain here the conditions which cause this work to be classed as "extra work")

Heavy volume of traffic plus nature of project requires considerably more flagging than originally estimated.

Work commenced Aug. 25,1969.

INSTRUCTIONS: A single order should not cover more than one class of work or more than one extra work job.

Submit five copies of the order to Salem. After approval of the order by the assistant state highway engineer, the Salem office will send one copy to the contractor, one to the division engineer and one to the resident engineer.

Project authorization	$ 1,449,116.43
Present estimate of project cost, including $ 13,000.00 for work under this order	$ 1,469,417.11
Expected ~~under-run~~ over-run amount	$ 20,300.68
Expected ~~under-run~~ over-run per cent	1.4%

Space to right of this line is for use of Sales Office

Submitted by: Vernon E. Shull
Resident Engineer

Approval Recommended: [illegible]
Construction Engineer or Bridge Engineer

Approval Recommended: [illegible]
Division Engineer

Approved: [illegible] 9-10-70
Deputy State Highway Engineer, Assistant State Highway Engineer or

SP 23577 734

RECEIVED
AUG 17 1970
FOR FILING

F-181(23)
7289

August 17, 1970

Mr. R. E. Simpson
Division Engineer
Bureau of Public Roads
477 Cottage Street, N.E.
Salem, Oregon 97308

Dear Mr. Simpson:

Reference is made to the Bureau of Public Roads' construction inspection report for Saddle Mountain Junction-Little North Fork Nehalem River Section, Sunset Highway, and specifically to the last paragraph of this report.

The amount that the aggregates do not comply with the specifications is minor and of no consequence. Prior to shipment of the material from Scappoose, our inspector made a screen analysis of a fine aggregate sample and found it to comply with the specifications. He advised the resident engineer of his findings and submitted a sample to the central laboratory, where the test showed it to be 2 percent low retained on a No. 100 sieve and two points low on the sand equivalent.

The resident engineer checked the stockpile and found the material suitable, but submitted a sample to the central laboratory, the results of which were a 3 percent deficiency on the No. 100 sieve but a satisfactory sand equivalent. This deficiency is considered borderline and of no consequence.

The concrete cylinder strengths for the deck did not reach the 4000 p.s.i. required compression strength in 28 days and do not compare with other Class A concrete on the project. However, swiss hammer readings indicate all concrete in the structure is now over the 4000 p.s.i. range.

Record tests of concrete are closely correlated with our job progress samples, as indicated by our cylinder sets Nos. 3 and 4.

We propose to add one-half sack of cement per cubic yard to the design mix for the remainder of the structure concrete on this project as long as the aggregate comes from the present source. If the aggregate source changes, the mix will be redesigned.

Very truly yours,

R. L. Porter
State Highway Engineer

By

A. E. Johnson
Assistant State Highway Engineer

cc: R. L. Porter
Tom Edwards
Victor D. Wolfe
Ivan Merchant
F. D. Moreau
R. D. Asburry

RJW:ew sr

STATE COPY

FORM PR-33B (REV. 3-68) OSHD (Salem) Region Wash DC

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

CONSTRUCTION INSPECTION REPORT

(PPM 20-6.1)

(Check appropriate box) ☐ Contact ☒ Project Stage Inspection ☐ Final Inspection tk1

Region No.	Report No.	County	Division
6	8	Clatsop	Oregon

Date of Inspection	Inspection Made By	Project No.
6-22-70	L. P. Rens, Area Engineer	F-181(23)

In Company With: Vern Shull, Resident Engineer, OSHD

Quality of Work*	Progress of Work	Time Elapsed	Work Completed
Satisfactory	Unsatisfactory	A-71 B-64 %	23 %

Report to Include: (1) Scope of Inspection (2) Summary of Findings, Recommendations, and Action Taken.

*(*Not applicable for all Contracts.)*

SADDLE MOUNTAIN JUNCTION - LITTLE NORTH FORK
NEHALEM RIVER SECTION
SUNSET HIGHWAY
Grading, Paving, and Structure

1. SCOPE OF INSPECTION:

The purpose of this inspection was to inspect in detail the grading phase of construction on this project.

2. SUMMARY OF FINDINGS AND RECOMMENDATIONS:

The grading phase of this project was being constructed in a very workmanlike manner and was considered to be in reasonably close conformance with the contract provisions in all respects. The embankment areas have all had suitable foundation excavation and backfill to ensure a stable foundation upon which to build the rather large embankments necessary for construction of this project. The materials being encountered in the excavation are excellent and consist mostly of a ripable grade of rock which compacts very nicely in the embankments.

The Project Inspector who will be performing the compaction tests for this project has not been properly certified by the OSHD; however, he is being given instruction by members of the Resident Engineer's inspection staff who have considerable experience in this area.

3. FINDINGS AND RECOMMENDATIONS:

a. Work completed

Clearing	93%
Drainage	18%
Grading	19%
Base	0%
Paving	0%
Structure	48%

(more)

RECEIVED
JUL 23 '70
BRIDGE DIVISION

NOTED
A. E. JOHNSON

2o Bridge
w Const
7-23-70

REPLACES PR 33A 3-65, WHICH WILL NOT BE USED.

b. Work in progress

The contractor began a double-shift grading operation on the date of this inspection. It had previously been reported that he would do this to attempt to gain some on the unfavorable progress of work exhibited to date. The contractor was preparing embankment foundations and building fills throughout the project length. Most of the grading was being done at the lower end while drainage installation, foundation excavation, and embankment foundation preparation were being performed near the upper end of the project. The clearing debris has been cleaned up very nicely and in a workman-like manner.

c. Work inspected

All the operations in progress on this date were inspected in detail. Locations of all drainage instaliations and construction of random fills and embankment foundation excavation and backfill locations were also reviewed in detail with the Project Engineer.

I observed very stable materials being used for the embankment construction except for one area just east of the bridge; however, the Resident Engineer indicated that the material had been rained on and had become unstable after original placement. He indicated that the material will either be stirred up and dried in place or removed prior to continuing the construction of the embankment. I also observed very workman-like procedures in the construction of embankment foundations, wasting of unsuitable material, drainage installations and benching of new fills into the existing fills.

All work being performed was considered to be in reasonably close conformity with the contract provisions.

d. Materials sampling and testing

Most of the materials being used for embankment construction are a soft ripable rock, therefore no compaction tests are being run. There are, however, several excavation areas of common material for which curves have been prepared for the required compaction testing. The inspector who will be running the compaction tests has not been certified by the OSHD, however, he has been given instruction by other members of the Project Engineer's staff who have considerable knowledge in this field.

Documentation for whether compaction tests are necessary or not is considered adequate. The Inspector has run sieve tests on the embankment materials and has noted the percent of material retained on the Number 4 screen, which is a larger percent than is required for compaction testing. He has done this at many locations throughout the embankment construction locations.

(more)

e. Extra work orders, state force orders, and price agreements

Extra Work Order No. 6 has been issued which provides for the scarifying of existing pavement, removal of some existing pavement, and grading and leveling of other existing pavement prior to the pavement overlays shown on the plans. This order is necessary due to the undulations in the existing pavement grade. Estimated cost is $5000. This order has been approved as participating.

Extra Work Order No. 7, which provides for the obliteration of unsightly skid roads inside the right of way but outside of the grading limits, has been issued and approved as participating. Estimated cost is $2000.

Extra Work Order No. 2, which provides for additional work in the streambed, may not be performed since the Oregon State Game Commission has reviewed the work performed to date and is satisfied with the streambed that now exists.

f. Labor compliance and EEO

The Project Engineer indicated that payrolls were being submitted promptly and are reasonably correct.

It was previously reported that the contractor's EEO officer had resigned from the company and a new officer would be appointed. The new officer has been appointed and is Jim Houck, a partner in the prime contractor's organization. A review of the EEO files for this project indicates that the EEO requirements have been satisfactorily met. It was noted that of a total of 25 employees there were 2 American Indians and 1 Spanish-surnamed American in the contractor's work force.

g. Construction signing and safety

The construction signing was observed to be in reasonably close conformance with the contract provisions.

h. Other comments

The Resident Engineer reports that the concrete in the deck portion of the structure work completed thus far is out of specifications. It is out of specifications due to aggregate gradation requirements and due to the fact that the 28-day compressive strengths did not come up to the full #4000 p.s.i. requirement. This problem is being studied by the Bridge Division of the OSHD and will be reported upon further after their recommendations have been received.

GI
Discuss

Swiss Harmon Creek:
@ abt. 60 days { 4500 psi
4850
5100

Rqd. 4000

RECEIVED
JUL 1 1970
OFFICE OF
STATE HIGHWAY ENGINEER

STATE COPY

APPROVED EFFECTIVE DATE 6-12-70
Contingent upon modification of project agreement if additional funds are required

RECEIVED
JUN 12 1970
OFFICE OF
SADDLE MTN.NCT. - LITTLE N. FK.
NEHALEM RIVER SECTION

F-181(23)
7289

Form E-[illegible]

OREGON STATE HIGHWAY DEPARTMENT

Order for Extra Work

TO BE PERFORMED ON FORCE ACCOUNT BASIS

BY J. K. Haas
Dist. Engineer

TITLE

DATE 6-11-70

U. S. BUREAU OF PUBLIC ROADS

Project Name NEHALEM RIVER SECTION Date May 21, 1970

Highway Sunset Contract No. 7289

County Clatsop Prefix 4-1004

Contractor Roy L. Houck Sons Corp. F. A. Project No. F-181(23)

Address P.O. Box 671, Salem, Oregon 97308 Order No. 7

The following work is hereby classified as "Extra Work", to be performed and paid for in accordance with the terms of contract.

Description of work to be done: Obliterate unsightly skid roads which were left by logging companies, and are beyond and above our excavation slopes. Clean up brush, stumps and debris, left by logging companies, which falls within cut and fill areas completed on a previous contract.

Location by station numbers:

Throughout Project

Estimate of quantities and cost:

Labor	$ 500.00
Equipment Rental	1,500.00
Total	$2,000.00

NOTED
E. B. KLABOE

Explanation: (Explain here the conditions which cause this work to be classed as "extra work")

The work involved will be primarily dozer work and can best be documented on Force Account Basis.

Work has not commenced.
Anticipate work to commence approx. June 5,1970.

INSTRUCTIONS: A single order should not cover more than one class of work or more than one extra work job.

Submit five copies of the order to Salem. After approval of the order by the assistant state highway engineer, the Salem office will send one copy to the contractor, one to the division engineer and one to the resident engineer.

		Space to right of this line is for use of Salem Office
Project authorization	$ 1,449,116.43	
Present estimate of project cost, including $ 2,000.00 for work under this order	$ 1,449,116.43	
Expected under-run / over-run amount	$ 0	
Expected under-run / over-run per cent	0	

Submitted by: Vernon E. Shull
Resident Engineer

Approval Recommended: [signature]
Construction Engineer or Bridge Engineer

Approval Recommended: [signature]
Asst Division Engineer

Approved: [signature]
Deputy State Highway Engineer, Assistant State Highway Engineer or [illegible]

6-15-70

SP*23577-724

RECEIVED
JUN 23 1970
OFFICE OF
STATE HIGHWAY ENGINEER

7289

STATE COPY

APPROVED EFFECTIVE [illegible]
Contingent upon modification of pro- t agreement if additional funds are required

OREGON STATE HIGHWAY DEPARTMENT

Order for Extra Work

BY D. K. Hansen
TITLE Dist. Engineer

TO BE PERFORMED ON FORCE ACCOUNT BASIS

DATE 6-3-70

Project Name SaddleMtn.Jct.-LittleN.Fk.Nehalem River — Date U.S. Bureau of PUBLIC ROADS Jun 70

Highway Sunset — Contract No. 7289

County Clatsop — Prefix 4-1004

Contractor Roy L. Houck Sons Corp. — F. A. Project No. F-161(23)

Address P.O. Box 671, Salem, Oregon 97308 — Order No. 1 (Revised)

The following work is hereby classified as "Extra Work", to be performed and paid for in accordance with the terms of contract.

Description of work to be done: Flagging Costs, State Share 50%

In cases where necessity for flagging exceeds a period of four hours or more, the wage rates for flagmen and pilot car operators, on which the State will participate on the force account basis, shall not exceed the rates specified for said classifications in the schedule of minimum hourly wage rates. In the event wage rates are not set forth for said classifications, the rate specified for "General Laborer" will apply.

In cases where the necessity for flagging is of an intermittent nature of four hours or less duration, the contractor may use crafts, other than flagmen at specified rates or general laborers, that are immediately available at the site of the work and the State will participate on the specified wage of the craft used.

Location by station numbers: Throughout Project

NOTED
F. B. KLABOE

Estimate of quantities and cost:

Flagging (State Share) ~~=XXXXX~~ $ 15,000.00

Explanation: (Explain here the conditions which cause this work to be classed as "extra work")

Specified in Special Provisions
Funds Supplied in Project Authorization
Work commenced Aug. 25,1969

INSTRUCTIONS: A single order should not cover more than one class of work or more than one extra work job.

Submit five copies of the order to Salem. After approval of the order by the assistant state highway engineer, the Salem office will send one copy to the contractor, one to the division engineer and one to the resident engineer.

Project authorization	$ 1,449,116.43
Present estimate of project cost, including $ 15,000.00 for work under this order	$ 1,449,116.43
Expected under-run / over-run amount	$ 0
Expected under-run / over-run per cent	0

Space to right of this line is for use of Salem Office

By D. Morgan 6-4-70

Submitted by: Vernon E. Stull
Resident Engineer

Approval Recommended: R. D. Calkins
Division Engineer

Approval Recommended:
Construction Engineer or Bridge Engineer

Approved: Robert A. Bell
Deputy State Highway Engineer, Assistant State Highway Engineer-or Office Engineer

Form FHWA-21 (12-67)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

Bureau of Public Roads
Box 300
Salem OR 97308

DATE: May 8, 1970

In reply refer to: 08-35-DB

MAY 13 1970
FOR FILING
F-181(23)
7289

TO : Mr. Forrest Cooper, State Highway Engineer
Salem, Oregon

FROM : R. E. Simpson, Division Engineer
Salem, Oregon

K labor

SUBJECT: Oregon Project F-181(23)
Saddle Mountain Junction-Little North Fork
Nehalum River Section
Unsatisfactory Progress of Work

The current Bureau of Public Roads Division office policy is to notify your office when the progress of work on Federal-aid construction projects is considered unsatisfactory. This is done so that appropriate action can be taken when considered necessary or warranted.

As of May 6 only approximately 15 percent of the work had been completed while approximately 50 percent of the contract time had elapsed. The assistant area engineer has discussed this condition with the project engineer. Apparently the contractor feels he can complete the project within the contract time. Still the lag between completed work and elapsed time is considerable and present indications are that an extension of contract time is not justified since the time lag is the result of the contractor's work schedule.

5-12-70
REFERRED TO
Morgan
BY ASST. STATE HWY. ENGR

NOTED
F. B. KLABO

RECEIVED
MAY 11 1970
OFFICE OF
STATE HIGHWAY ENGINEER

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

Form E-210—5M

STATE COPY

OREGON STATE HIGHWAY DEPARTMENT

RECEIVED
MAY 11 1970
OFFICE OF
STATE HIGHWAY ENGINEER

F-181(23)
7289

C - Contingent upon modification of pro- agreement if additional funds are re ired

Order for Extra Work

By G. K. Hosmer
Dist. Engineer

TO BE PERFORMED ON FORCE ACCOUNT BASIS

DATE 5-8-70 April 15, 1970

U. S. BUREAU OF PUBLIC ROADS

Project Name Saddle Mtn. Jct.-Little N.Fk. Nehalem River

Highway Sunset — Contract No. 7289

County Clatsop — Prefix 4-1004

Contractor Roy L. Houck Sons Corp. — F. A. Project No. F-181(23)

Address P.O. Box 671, Salem, Oregon 97308 — Order No. 6

The following work is hereby classified as "Extra Work", to be performed and paid for in accordance with the terms of contract.

Description of work to be done: Scarify existing pavement, remove existing pavement and grade existing roadbed as required to provide a suitable grade for surfacing materials.

Location by station numbers:

Throughout Project.

NOTED
F. B. KLABOE

Estimate of quantities and cost:

Lump Sum Estimate = $ 5,000.00

Explanation: (Explain here the conditions which cause this work to be classed as "extra work")

The present pavement and shoulders vary from above proposed finish grade to below proposed subgrade. The required work will be quite spotty and in irregular sections so not feasible to measure on a yardage basis. No bid item for scarifying only. Most of work cannot be done until traffic is using the new roadbed section. Surfacing materials to be furnished on Bid Items applicable.
Work has not commenced.

INSTRUCTIONS: A single order should not cover more than one class of work or more than one extra work job.

Submit five copies of the order to Salem. After approval of the order by the assistant state highway engineer, the Salem office will send one copy to the contractor, one to the division engineer and one to the resident engineer.

		Space to right of this line is for use of Salem Office
Project authorization	$1,449,116.43	
Present estimate of project cost, including $5,000.00 for work under this order	$1,449,116.43	
Expected under-run / over-run amount	$ 0	
Expected under-run / over-run per cent	0	

Submitted by: Vernon E Mull
Resident Engineer

Approval Recommended: for
Construction Engineer or Bridge Engineer

Approval Recommended: Asst.
Division Engineer

Approved: 5-11-70
Deputy State Highway Engineer, Assistant State Highway Engineer-Construction or Office Engineer.

SP*23577-934

RECEIVED
MAR 10 1970
FILING

Ætna
LIFE & CASUALTY

Casualty & Surety Division
1201 S. W. Twelfth Avenue
Portland, Oregon 97205
222-9111

March 6, 1970

F-181(23)
7227

Floyd Query
Oregon State Highway Commission
Salem, Oregon

Dear Mr. Query:

Subject: OSHD 7289 Little N. Fork Nehalem River - Sunset Highway
Clatsop County, Oregon
Roy L. Houck Sons' Corporation, Contractor

Estimate No. 4 for work performed in the aggregate amount of $16,263.00 is presently payable to the contractor.

Ætna Casualty & Surety Company and the United States National Bank of Oregon have previously directed that you not make payments to the contractor under this and other OSHD contracts.

Now Ætna Casualty & Surety Company and the United States National Bank of Oregon withdraw their respective notices as they relate to Estimate No. 4, Contract 7289, and each agree and request that you make payment of this estimate directly to Roy L. Houck Sons' Corporation.

Very truly yours,

United States National Bank
Main Branch
Portland, Oregon

by: _____

Adam Richter
Vice President

Ætna Casualty & Surety Co.
1201 S. W. 12th
Portland, Oregon

by: _____

W. L. George

Roy L. Houck Sons' Corporation
P. O. Box 671
Salem, Oregon

by: _____

Roy L. Houck, Jr.
President

Copy to Houck's rian to take to Accty to get check
7.2.

NOTED
FLOYD QUERY
3-9-70

RECEIVED
MAR 6 - 1970
FOR FILING

MARTIN LALOR CRIMMINS
ROGER KENT
JOHN LOCKWOOD BRADLEY
ROBERT E. BURNS
RICHARD M. KAPLAN
WILLIAM L. PORTER
ROBERT WEBBER WILLIAMS
J. THOMAS HANNAN

LAW OFFICES OF
CRIMMINS, KENT, BRADLEY & BURNS
155 MONTGOMERY STREET
SAN FRANCISCO, CALIFORNIA 94104
(415) 982-5250
CABLE ADDRESS
"CRIMKEN"

OF COUNSEL
JOHN C. SOBIESKI
611 WEST SIXTH STREET
LOS ANGELES 90017
(213) 626-2137

F-181(23)
7289

March 2, 1970

Aetna Casualty & Surety Company
c/o Updegraff Insurance, Inc.
776 Commercial Street, S.E.
Salem, Oregon 97301

Re: Project No. F-181 023 Contract #7289
Grading Paving and Structural on Saddle Mountain Junction, Little North Fork Nehalem River Section of Sunset Highway in Clatsop County
Contractor: Roy L. Houck Sons Corp.

Gentlemen:

Copies of my letter of February 19, 1970 to the Oregon State Highway Commission and that Commission's reply of February 25 to me have previously been sent to you. It appears that the claim may have to be made under the bond, and that my prior letter is being treated as the necessary claim form.

Please advise whether payment will be made in the near future, and if there is anything further which you would like us to file in support of our claim on behalf of The L. B. Foster Company.

In our prior correspondence, we sent you copies of L. B. Foster Company invoices S08575 and SX 56728, totaling $3,417.75, for steel materials shipped to the captioned job. There is further reference to the job in the first paragraph of the Highway Commission's letter.

May we please hear from you at your earliest opportunity as to when we can expect to receive payment, or in the event that you want further documentation, please let us know the nature of it and we will supply it.

Very truly yours,

Richard M. Kaplan

Richard M. Kaplan

RMK:pec
cc: (1) The L. B. Foster Company
(2) Oregon State Highway Division
ATTN: Floyd Query, Secretary

RECEIVED

NOTED
FLOYD QUERY

NOTED
C. W. HEAD

RECEIVED
FEB 26 1970
FOR FILING

Claim File 4470

FILED
FEB 26 1970
CLAY MYERS
SECRETARY OF STATE

F-181(23)
7289

OREGON STATE HIGHWAY DIVISION

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

February 25, 1970

Crimmins, Kent, Bradley
& Burns
155 Montgomery Street
San Francisco, California 94104

Attention: Richard M. Kaplan

Gentlemen:

This is to acknowledge receipt of your claim letter and attached invoices on behalf of L. B. Foster Company stating that Roy L. Houck Sons' Corporation owes them $3,417.75 for steel materials. This appears to be in reference to the Roy L. Houck Sons' Corporation Contract No. 7289 for grading, paving and structure on the Saddle Mtn. Jct.-Little North Fork Nehalem River Section of the Sunset Highway in Clatsop County.

The Aetna Casualty & Surety Company through Updegraff Insurance, Inc., 776 Commercial Street, S.E., Salem 97301, furnished the performance bond on this contract, which is given to assure completion of the contract and payment of all bills incurred in it. We will advise them of the receipt of your client's claim and we will also forward it to the Secretary of State for filing.

Please notify this office when your client's claim has been paid.

Very truly yours,

NOTED ON CARD
2-27-70
CR

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

RECEIVED
FEB 27 1970
OREGON
STATE HIGHWAY COMMISSION

cc The Aetna Casualty & Surety Co.
Updegraff Insurance, Inc.
Roy L. Houck Sons' Corp.
Commission
Secretary of State

NOTED
C. W. HEAD

- Please acknowledge receipt of this claim on the enclosed copy of this letter.

MARTIN LALOR CRIMMINS
ROGER KENT
JOHN LOCKWOOD BRADLEY
ROBERT E. BURNS
RICHARD M. KAPLAN
WILLIAM L. PORTER
ROBERT WESLEY WILLIAMS
J. THOMAS HANNAN

LAW OFFICES OF
CRIMMINS, KENT, BRADLEY & BURNS
155 MONTGOMERY STREET
SAN FRANCISCO, CALIFORNIA 94104
(415) 982-5250
CABLE ADDRESS
"CRIMKEN"

OF COUNSEL
JOHN G. SOBIESKI
311 WEST SIXTH STREET
LOS ANGELES 90017
(213) 628-2137

February 19, 1970

OREGON STATE HIGHWAY COMMISSION
State Highway Building
Salem, Oregon 97310

Attention: Mr. Cleary

Re: Project No. F-181 023 Contract #7289
Grading Paving and Structural on Saddle Mountain Junction, Little North Fork Nehalem River Section of Sunset Highway in Clatsop County
Contractor: Roy L. Houck Sons Corp.

Gentlemen:

I am writing on behalf of The L. B. Foster Company with whom you have had prior correspondence and telephone discussions on their claim. Under their invoices S 08575 and SX 56728, my client supplied steel materials for the above captioned job in the total sum of $3,417.75. A pre-lien notice was filed with you on December 29, 1969.

It is my understanding that in a conversation between Mr. Cleary and the Credit Manager of The L. B. Foster Company on February 16, 1970, my client was advised that the bonding company is handling various invoices, but that if we cared to file a claim with the State Highway Commission with a copy to the bonding company, the Highway Commission would see to it that the claim was paid. I trust that this letter will constitute a sufficient claim.

In case it would be more convenient to you, to have additional copies of the invoices mentioned, I attach hereto, both to the original and with the copy of this letter to Aetna Casualty & Surety Company, copies of the invoices mentioned in the first paragraph of this letter.

May we ask that remittance either be made directly to The L. B. Foster Company at One California Street, San Francisco, California 94111, or to this office for transmittal to our client.

If you would like to have any papers executed in connection with the requested payment, please send them to me, and I will see to it that they are signed and returned to you.

Thank you very much for your anticipated cooperation.

Very truly yours,

Richard M. Kaplan

Richard M. Kaplan

pzc

RMK:pzc

Enclosures

cc: (1) Aetna Casualty & Surety Co.
c/o Updegraff Insurance, Inc.
776 Commerce Street, S.E.
Salem, Oregon 97301

(2) Roy L. Houck Sons Corp.
Box 671
Salem, Oregon

(3) A. M. Roberts
Credit Manager
THE L. B. FOSTER COMPANY
One California Street
San Francisco, Calif. 94111

RECEIVED
FEB 24 1970
OREGON
STATE HIGHWAY COMMISSION

P 101 4/66

SAN FRANCISCO
L. B. FOSTER CO.

'S 08575

SOLD TO: ROY L. HOUCK SONS CORP.
BOX 671
SALEM, OREGON

SHIP TO: SAME C/O JOBSITE
SADDLE MOUNTAIN JUNCTION
HIGHWAY 26 APPROX. 18 MILES
EAST OF SEASIDE, OREGON

DATE ACKNOW.	CUST. ORDER NO.	F.O.B.	TERMS:
11-24-69		SP/FRT. PREPAID	1/2 OF 1 % 10 DAY

NET 30 DAYS
1% PER MONTH SERVICE CHARGE WI
BE ASSESSED ON ALL BALANCES N
PAID WITHIN 30 DAYS

SHIP VIA	CAR NO.	DATE SHIPPED	INVOICE DATE
WILHELM TRUCK		12-22-69	12-24-69

ITEM	ORDERED	SHIPPED	DESCRIPTION	WEIGHT	PRICE	EXTENSION
			501-4-14200			
	28 PCS	25 PC	10" X 42# NEW FOREIGN H-PILE A-36		$ 7.50 M CWT	$ 3087.00
			3 PCS-40' LENGTHS	41,160#		
			9 PCS-45' LENGTHS			
			16 PCS-35' LENGTHS			
			1902-501-4	102.90		

F-102 5M 10/69

SAN FRANCISCO
L. B. FOSTER CO.

SX 56728 BACK ORDER

SOLD TO: ROY L. HOUCK SONS CORP.
BOX 671
SALEM, OREGON

SHIP TO: SAME C/O JOBSITE
SADDLE MOUNTAIN JUNCTION
HIGHWAY 26 APPROX. 13 MILES
EAST OF SEASIDE, OREGON

DATE ACKNOW.	CUST. ORDER NO.	F.O.B.	TERMS:
11-26-69		SP/FRT. PREPAID	1 % 10 DAYS

NET 30 DAYS
1% PER MONTH SERVICE CHARGE WILL BE ASSESSED ON ALL BALANCES NOT PAID WITHIN 30 DAYS.

SHIP VIA	CAR NO.	DATE SHIPPED	INVOICE DATE
WILHELM TRUCK		2-10-70	2-12-70

ITEM	ORDERED	SHIPPED	DESCRIPTION	WEIGHT	PRICE	EXTENSION
			501-4-14200			
	3 PCS	3 PCS 35'	10" X 42# IBH FOREIGN H-PILE A-36 35' LENGTHS	4410#	$ 7.50 CWT	$ 330.75

AMOUNT SHIPPED ON PACKET NO.
$ 0.00

FIRST PART SHIPMENT 25 PCS
TOTAL SHIPPED TO DATE 25 PCS
TOTAL ORDERED 28 PCS
BALANCE DUE 3 PCS

RECEIVED
JAN 28 1970
FOR FILING

Claim 4452

FILED
JAN 23 1970
CLAY MYERS
SECRETARY OF STATE

Files C

OREGON STATE HIGHWAY DIVISION

F-181(23)

HIGHWAY BUILDING • SALEM, OREGON • 97310 • Phone 364-2171

January 22, 1970

7289

Western Equipment Company
Box 400
La Grande, Oregon 97850

Gentlemen:

This is to acknowledge receipt of your letter of January 20 and attached copy of your claim letter dated January 20, 1970, to The Aetna Casualty & Surety Company advising them that Roy L. Houck Sons' Corporation owes you for rental charges in the amount of $1,518 plus interest.

This appears to be in reference to the Roy L. Houck Sons' Corporation Contract No. 7289 for grading, paving, and structure on the Saddle Mountain Junction-Little North Fork Nehalem River Section of the Sunset Highway in Clatsop County.

The Aetna Casualty & Surety Company through Updegraff Insurance, Inc., 776 Commercial Street, S.E., Salem, furnished the performance bond on this contract. We will advise the surety and the agent of the receipt of your claim letter and we will also forward it to the Secretary of State for filing.

Please advise this office when your claim has been paid.

NOTED ON CARD
1-26-70 ER

Very truly yours,

ORIGINAL SIGNED
FLOYD QUERY

Floyd Query, Secretary
OREGON STATE HIGHWAY COMMISSION

RECEIVED
JAN 25 1970
OREGON
STATE HIGHWAY COMMISSION

cc: The Aetna Casualty & Surety Company
Updegraff Insurance, Inc.
Roy L. Houck Sons' Corporation
Commission
Hon. Clay Myers - Please acknowledge receipt of this claim on the enclosed copy of this letter.

NOTED
C. W. HEAD

YOUR CAT® DEALER

Cat, Caterpillar and Tractomotor are registered trademarks of Caterpillar Tractor Co.

WESTERN EQUIPMENT COMPANY

GENERAL OFFICES:
4009 Fairview Ave.
Mailing Address Box 7487
Boise, Idaho 83707
Phone 343-5401
Area Code 208

2405 Hwy. 30 W.
Mailing Address Box 4640
Pocatello, Idaho 83201
Phone 232-2640
Area Code 208

1805 Adams Ave.
Mailing Address Box 400
LaGrande, Oregon 97850
Phone 963-3101
Area Code 503

323 Canyon City Blvd.
Mailing Address Box 377
John Day, Oregon 97845
Phone 575-1301
Area Code 503

La Grande, Oregon
January 20, 1970

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Oregon State Highway Commission
State Highway Building
Salem, Oregon 97310

Re: Roy L. Houck Sons' Corporation
Contract #7289
Oregon State Highway Department
Saddle Mt. Job

Gentlemen:

We enclose a copy of our claim, as that claim now exists against Roy L. Houck Sons' Corporation, prime contractor on the above mentioned contract. This claim is made in accordance with Section 270b-(a) of the Miller Act.

Yours very truly,

WESTERN EQUIPMENT COMPANY

Jean E. Walker

Jean E. Walker (Mrs.)
Credit Department

JEW/lb

Enc.

RECEIVED
JAN 21 1970
OREGON
STATE HIGHWAY COMMISSION

NOTED
FLOYD QUERY

CC: >OREGON STATE HIGHWAY COMMISSION
ROY L. HOUCK SONS' CORPORATION
BERT ROBERTS - BOISE
TED NUGENT

La Grande, Oregon
January 20, 1970

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Aetna Casualty & Surety Co.
1201 S. W. 12th
Portland, Oregon 97200

Re: Roy L. Houck Sons' Corporation
Contract #7289
Oregon State Highway Department
Saddle Mt. Job

Gentlemen:

Pursuant to Section 270b-(a), of the Miller Act, we hereby present our claim as that claim now exists against Roy L. Houck Sons' Corporation, prime contractor on the above mentioned contract. Our claim is for rental charges of new Fleco Brush Rake, s/n 40936, plus interest on the past due balances as they become past due. The total amount due and owing amounts to $1,518.00 and we hereby make demand for payment thereof plus interest on any balance now past due.

We reserve the right, should it become necessary, to sue on the payment bond you have written as surety on the above named contractor, for the amount specified herein, or the balance thereof, unpaid at the time of institution of said suit, and to prosecute said action to final execution and judgement for the sums due, plus interest and reasonable attorney's fees thereon.

Yours very truly,

WESTERN EQUIPMENT COMPANY

Jean E. Walker

Jean E. Walker (Mrs.)
Credit Department

JEW/lb

RECEIVED
Oregon
STATE HIGHWAY COMMISSION

RECEIVED
JAN 12 1970

F-181(23)

7249

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
January 9, 1970

SUBJECT: Roy L. Houck

To:

Memo to Files

On the morning of December 30, 1969, the following individuals met in Floyd Query's office: Roy L. Houck, Jr.; George Rohde; and Floyd Query.

I wasn't in Mr. Query's office, but being in the adjacent office with the door open, I could hear some of the conversation, particularly Mr. Houck's. I do not recall Mr. Houck's exact words, but the following are some of his comments:

> How can you hold up payments due on our contracts by just a telephone call from our surety?
>
> You are taking sides by forwarding checks to our surety.
>
> We have obligations to the Salem U. S. National Bank.
>
> We have been picking up our warrants for several years now direct from your Accounting Division. We would phone to see when the warrants were ready and then we would pick them up, which would save a little time instead of receiving them through the mail.

Mr. Houck did make a statement regarding the sale of their equipment, but I do not recall just how it was phrased.

C. W. Head

C. W. Head, Assistant Secretary

CWH:sj

cc Floyd Query

RECEIVED
JAN 29 1970
FOR FILING

E-181 (23)
7287

UNITED STATES NATIONAL BANK OF OREGON

LADD & BUSH — SALEM BRANCH
302 STATE STREET
P. O. Box 111, SALEM, OREGON 97308
HEAD OFFICE — PORTLAND

January 8, 1970

(CERTIFIED MAIL, RETURN RECEIPT REQUESTED)

State of Oregon
State Highway Commission
Director of Highways
Salem, Oregon

Gentlemen

You have recently received from The Aetna Casualty and Surety Company a letter dated December 31, 1969, referring to a contract wherein Roy L. Houck Sons Corp. agrees to construct certain roads for you described in your contract #7185, #7215 and #7239. The letter states that Houck has failed to pay labor and materials in connection with the performance of the contract and, in the last paragraph, notifies you that all further payments under the contract should be made to Aetna and not to anyone else without its written consent.

As you have previously been informed by the writer, earned estimates owing by you to Houck on this contract are subject to a perfected security interest in favor of this bank as security for loans made against the same to Houck.

This letter is to inform you that this bank does not concur with the position of Aetna in this matter but feels that it has and will assert a superior lien and claim as to such earned estimates and for this reason directs you not to make payment of the same to Aetna and further directs you to make payment of the same direct to this bank.

Sincerely

William W. Bales
Assistant Vice President

cc H. L. Haynes
John Huisman
James R. Moore, Standard Plaza Building — attorney for Aetna
Norman B. Kobin, Oregon Bank Building

Copy to Rohde
1-9-70

RECEIVED
JAN 9 1970
OREGON
STATE HIGHWAY COMMISSION

NOTED
FLOYD QUERY

FORM E-30 SOM 10-68

RECEIVED
JAN 6 - 1970

E-181(20)
7289

OREGON STATE HIGHWAY DEPARTMENT

INTER-DEPARTMENT CORRESPONDENCE

Salem, Oregon
January 6, 1970

To: Mr. Floyd Query
Secretary

SUBJECT: Roy L. Houck Sons' Corp.
Contract Nos. 7185, 7215, 7289

BUILDING

Enclosed for your records are copies of financing statements and a security agreement dated September 26, 1969, under which the U. S. National Bank of Oregon has advised us that it claims a security interest in amounts earned by the Houck Firm under the above contracts. Apparently the financing statements were filed on October 1, 1969, in the offices of the Marion County Clerk and the Secretary of State (a third statement was also filed in the State of Washington on October 2, 1969).

Copies of these documents were provided to me on January 5, 1970, by E. L. Crawford, Attorney representing U. S. National Bank. Mr. Crawford stated that his purpose in so doing was to place the Highway Commission on notice of the Bank's claim.

George Rohde, Chief Counsel

By
Al Johansen, Staff Attorney

AJ:cr
Enclosures

2. Debtor(s):	3. Secured Party(ies):	Filing Officer (Date, time, number and filing office):
OY L. HOUCK SONS' CORPORATION Mailing Address(es): 158 Chemeketa N. E. Salem, Oregon	United States National Bank Ladd & Bush-Salem Branch 302 State St Salem, Oregon	FILED OCT 1 '69 9 00 AM

This financing statement covers the following types (or items) of property: (If collateral is crops growing or to be grown, or goods which are or are to become fixtures, give description reasonably identifying the real estate.):

Accounts receivable on construction contracts commonly referred to as "Earned Estimates".

5A. Assignee of Secured Party (ies), if any:

5B. Address of Assignee from which security information obtainable:

Check [X] if covered: [X] Proceeds of Collateral are also covered. [X] Products of Collateral are also covered. No. of additional sheets attached [ ]

Filed with: [X] SECRETARY OF STATE: [ ] RECORDER [X] COUNTY CLERK OF Marion COUNTY:

Termination Statement—This statement of termination of financing is presented to a filing officer for filing pursuant to the Uniform Commercial Code. The Secured Party certifies that the Secured Party no longer claims a security interest under the financing statement bearing the file number shown above. (Fee $1.00).

Dated: ....., 19.....

By: .....
(Signature of Secured Party or Assignee of Record—Not valid until signed)

FILING OFFICER COPY—ACKNOWLEDGMENT—Filing officer is requested to note file number, date and hour of filing on this copy and return it to the person filing, as an acknowledgment.

This form of financing statement is approved by the Secretary of State.

STANDARD FORM—UNIFORM COMMERCIAL CODE—FORM UCC-1

This FINANCING STATEMENT is presented to filing officer for filing pursuant to the Uniform Commercial Code.

8. Maturity Date: (If any)

2. Debtor(s):	3. Secured Party(ies):	Filing Officer (Date, time, number and filing office):
OY L. HOUCK SONS' CORPORATION Mailing Address(es): 158 Chemeketa N. E. Salem, Oregon	United States National Bank of Oregon Ladd & Bush-Salem Branch 302 State St Salem, Oregon	FILED MARION COUNTY OREGON FILE NO. 69479 DATE OCT 1 - '69 -9 00 AM HERMAN WM. LANIG MARION COUNTY RECORDER DEPUTY

This financing statement covers the following types (or items) of property. (If collateral is crops growing or to be grown, or goods which are or are to become fixtures, give description reasonably identifying the real estate.):

Accounts receivable on construction contracts commonly referred to as "Earned Estimates".

5A. Assignee of Secured Party (ies), if any:

5B. Address of Assignee from which security information obtainable:

Check [X] if covered: [X] Proceeds of Collateral are also covered. [X] Products of Collateral are also covered. No. of additional sheets attached [ ]

Filed with: [X] SECRETARY OF STATE: [ ] RECORDER [X] COUNTY CLERK OF Marion COUNTY:

Termination Statement—This statement of termination of financing is presented to a filing officer for filing pursuant to the Uniform Commercial Code. The Secured Party certifies that the Secured Party no longer claims a security interest under the financing statement bearing the file number shown above. (Fee $1.00).

Dated: ....., 19.....

By: .....
(Signature of Secured Party or Assignee of Record—Not valid until signed)

FILING OFFICER COPY—ACKNOWLEDGMENT—Filing officer is requested to note file number, date and hour of filing on this copy and return it to the person filing, as an acknowledgment.

STANDARD FORM—UNIFORM COMMERCIAL CODE—FORM UCC-3

This FINANCING STATEMENT is presented to filing officer for filing pursuant to the Uniform Commercial Code.

No. of additional sheets presented:

3. Maturity date (if any):

1. Debtor(s): (last name first, and mailing address(es)
ROY L. ROUCK SONS' CORPORATION
1138 Chemeketa N. E.
Salem, Oregon

2. Secured Party(ies) and address(es):
UNITED STATES NATIONAL BANK
OF OREGON
Ladd & Bush-Salem Branch
302 State St
Salem, Oregon

4. FOR FILING OFFICER ONLY
(Date, time, number and filing office)
'63 OCT 2 AM 8:00
0075230

5. This Financing Statement covers the following types (or items) of property:
(Use this space for Real Property description if required.)

Accounts receivable on construction contracts commonly referred to as "Earned Estimates".

STATE OF WASH

6. Assignee(s) of Secured Party(ies) and address(es)

0509536

CHECK [X] IF COVERED: [ ] Proceeds of collateral are also covered [ ] Products of collateral are also covered

Filed with:

[ ] The collateral described herein is brought into this state already subject to a security interest in the state of .....

TERMINATION STATEMENT—This statement of termination of financing is presented to a filing officer for filing pursuant to the Uniform Commercial Code. The Secured Party certifies that the Secured Party no longer claims a security interest under the financing statement bearing the file number shown above.

Dated: _____ 19____ BY: _____
SIGNATURE(S) OF SECURED PARTY(IES)

3—FILING OFFICER—ACKNOWLEDGEMENT WASHINGTON STATE UCC-1 FORM APPROVED BY A. LUDLOW KRAMER, SECRETARY OF STATE (4-67)

LIMITED - SEE SPECIAL PROVISIONS

SECURITY AGREEMENT COVERING ACCOUNTS, CONTRACT RIGHTS AND CHATTEL PAPER

(Not for Use with Finance Companies)

Sept. 26, 1969
(Date)

1.0 ROY L. HOUCK SONS' CORPORATION
(Name)

1158 Chemeketa Street, N.E. (No. and Street) Salem (City) Marion (County) Oregon (State)

the debtor hereunder (hereinafter called "Borrower"), hereby grants to UNITED STATES NATIONAL BANK OF OREGON, the secured party hereunder (hereinafter called "Bank"), a security interest in all accounts, instruments, drafts, acceptances and other forms of receivables (including chattel paper), and all rights of the Borrower earned or to be earned under contracts to sell goods or render services, all of which are, or may be, identified by the terms of paragraph 6 below, and all of which now belong or hereafter will belong to Borrower for goods sold by it or for services rendered by it, together with all guaranties and securities therefor, all right, title and interest of Borrower in the merchandise which gave rise thereto, including the right of stoppage in transit, and in the proceeds of all of the foregoing. All of the foregoing is hereinafter called the "Collateral."

2.0 The security interest granted hereby is to secure payment and performance of liabilities and obligations of Borrower to Bank of every kind and description, direct or indirect, absolute or contingent, due or to become due, now existing or hereafter arising (all hereinafter called "Obligations").

Borrower hereby agrees as follows:

3.0 **Definitions.** As herein used:

3.10 "Qualified Account" means a right of Borrower to payment for goods sold or leased by it or for services rendered by it which conforms to the warranties set forth in paragraph 4.3 hereof and which is due and payable according to terms acceptable to Bank.

3.20 "Slow Account" is any Qualified Account with respect to which any of the following has occurred or is applicable:

3.21 all or a substantial part of the property giving rise to the Qualified Account is returned, rejected, repossessed, lost or damaged;

3.22 any dispute with the account debtor arises;

3.23 the Account becomes past due under the original terms thereof for such period as may from time to time be prescribed by the Bank.

3.24 death, dissolution, termination of existence, insolvency, business failure, appointment of a receiver for any part of the property of, assignment for the benefit of creditors by, or the filing of a petition in bankruptcy, or the commencement of any proceeding under any bankruptcy or insolvency laws by or against, the account debtor;

3.25 the account debtor does not meet credit standards acceptable to Bank.

The Bank shall have sole discretion as to whether a Qualified Account is or has become a Slow Account.

3.30 "Borrowing Base" means an amount equal to such percentage of the outstanding amount of Qualified Accounts exclusive of S... Accounts as may be prescribed from time to time by the Bank.

4.0 **Warranties.** Borrower represents and warrants as follows:

4.1 If a corporation, Borrower is duly organized and existing under the laws of Oregon and is duly qualified and in good standing in every other State in which it is doing business.

4.2 If a corporation, the execution, delivery and performance hereof are within Borrower's corporate powers, have been duly authorized, are not in contravention of law or the terms of Borrower's charter, bylaws or other incorporation papers, or of any indenture, agreement or undertaking to which Borrower is a party or by which it is bound.

4.3 Any Qualified Account reported by Borrower to Bank will be a good and valid account representing an undisputed bona fide indebtedness of the account debtor to Borrower for merchandise theretofore shipped or delivered pursuant to or in connection with a contract of sale, or for services theretofore performed by Borrower to or for said account debtor. There are and will be no setoffs or counterclaims of any nature whatsoever against any Qualified Account. No agreement under which any deduction or discount may be claimed has been or will be made with the account debtor on any of the Qualified Accounts except as reflected in the identification of Collateral as set forth in paragraph 6 hereof. Borrower will be the lawful owner of all Qualified Accounts and will have good right to pledge, sell, assign and transfer the same and grant a security interest therein. None of the Collateral has been or will be pledged, sold, assigned or transferred to any other person than Bank or in any way encumbered except to Bank and Borrower will warrant and defend all Collateral against the claims and demands of all persons. No account reported by Borrower to Bank shall represent payment due under a consignment or a sale or return agreement.

4.4 In addition to that shown in the beginning of this agreement, Borrower has places of business only at the following locations:

Salem	Marion	Oregon
1158 Chemeketa Street, N.E.		
(City)	(County)	(State)
(City)	(County)	(State)
(City)	(County)	(State)
(City)	(County)	(State)

4.5 If Borrower has an office in more than one State, the office where Borrower keeps its records concerning accounts, contracts, rights and chattel paper is 1158 Chemeketa Street, N.E.
(No. and Street)

Salem (City) Marion (County) Oregon (State),

or if left blank, is that shown at the beginning of this agreement.

4.6 Subject to any limitation stated therein or in connection therewith, all information furnished to Bank concerning Collateral and proceeds thereof or otherwise for the purpose of obtaining credit or an extension of credit is or will be at the time the same is furnished, accurate and correct in all material respects and complete insofar as completeness may be necessary to give Bank a true and accurate knowledge of the subject matter.

5.0 Possible Loans.

5.1 Insofar as Borrower may request and Bank may be willing in its discretion to make loans to Borrower, such loans will be evidenced by Borrower's promissory note, payable on such terms as Bank may accept.

5.2 Borrower understands that Bank will use the Borrowing Base as a limitation on loans. Borrower agrees that the outstanding principal balance of loans hereunder, together with interest due and unpaid thereon, will at no time exceed the Borrowing Base, and agrees that if at any time the loans do exceed the Borrowing Base, Borrower shall make payments in cash, on demand, in reduction of such interest and principal, in such amount as may be necessary to eliminate such excess.

6.0 Identification and Delivery of Collateral. The books and records of the Borrower pertaining to the Collateral and the Collateral itself, shall be marked and identified as required by the Bank.

6.1 The Borrower shall deliver to the Bank all original documents, instruments, and chattel paper described as "Collateral" in 1.0 hereof, and if any of the chattel paper subject hereto covers property which is covered by certificates of title, the Borrower shall also deliver all such certificates. In addition, the Borrowers shall also deliver either:

6.2 original and duplicate invoices representing sales and delivery of goods or services, together with evidence of delivery as may be requested by the Bank, all invoices to bear an assignment stamp in favor of the Bank in terms acceptable to the Bank; or

6.3 at the time of each borrowing, a completed and executed Borrower's Certificate-Accounts Receivable and/or Accounts Receivable Schedule, satisfactory in form to the Bank; and in addition the Borrower shall deliver monthly a completed and executed aged Schedule of Collateral satisfactory in form to the Bank.

6.4 Bank's failure to demand delivery of the writings described herein or Borrower's failure or refusal to deliver them shall in no way diminish Bank's security interest in the Collateral described in paragraph 1.0 hereof, it being the intention of the parties that the Bank shall have a security interest in all items of Collateral described in paragraph 1.0, both presently owned by Borrower or acquired hereafter, whether or not specifically identified or listed.

7.0 Places of Business; Inspection of Records; Insurance; Further Assurance.

7.1 Borrower will promptly notify Bank in writing of any addition to, change in or discontinuance of its place(s) of business as shown at the beginning of this agreement and in paragraph 4.4 and the location of the office where it keeps its records as set forth in paragraph 4.5.

7.2 Borrower will at all reasonable times allow Bank by or through any of its representatives, attorneys or accountants, to examine and inspect and make extracts from Borrower's books and other records and to arrange for verification of Collateral, under reasonable procedures, directly with account debtors or by other methods. Borrower will furnish to Bank upon request additional statements of any Collateral, together with all notes or other papers evidencing the same and any guaranties, securities, or other documents and information relating thereto; and generally at all times will furnish to Bank such statements and information as it may reasonably request.

7.3 When so requested by Bank, Borrower will provide, at no expense to Bank, insurance satisfactory to Bank on all chattels which may be listed on any chattel paper subject to this agreement, and affix to the policies loss payable clauses satisfactory to Bank and provide proper evidence of such insurance to the Bank.

7.4 Borrower will at all times at the request of Bank, do, make, execute and deliver all such additional and further acts, things, deeds, assurances and instruments as Bank may require, to more completely vest in and assure to Bank its rights hereunder and in or to the Collateral and the proceeds thereof, and will pay the cost of any necessary filing.

8.0 Collections; Notice of Assignment; Expense.

8.1 Borrower shall make collections on the Collateral, hold the proceeds received from collections in trust for Bank and turn over such proceeds to Bank daily in the exact form in which they are received together with a collection report in form satisfactory to Bank. Cash proceeds (including checks) shall be deposited in an account in the Bank designated as Cash Collateral Account, Roy L. Houck Sons' Corporation,

bearing Account Number 103-473, said account to be under the Bank's sole control. Bank in its discretion may apply any or all cash proceeds to the payment of Borrower's Obligations or may release such proceeds as it sees fit to Borrower.

8.2 Bank may at any time notify account debtors on any Collateral that the Collateral has been assigned to Bank and that proceeds thereof shall be paid to Bank. Upon request of Bank, Borrower will so notify such account debtors and will indicate on all billings to such account debtors that the accounts are payable to Bank. Any proceeds of accounts thereafter received by Borrower shall be turned over to Bank daily in the exact form in which they are received.

8.3 Bank shall have full power to collect, compromise, endorse, sell or otherwise deal with Collateral or proceeds thereof in its own name or that of Borrower; and shall have full power to endorse for the Borrower the certificates of title referred to in 6.1 and to sell or otherwise deal with the property represented thereby in its own name or that of Borrower.

9.0 Financing Statements.

9.1 At the request of Bank, Borrower will join with Bank in executing one or more Financing Statements pursuant to the Uniform Commercial Code in form satisfactory to Bank.

9.2 Without the written consent of Bank, Borrower will not allow any Financing Statement covering any Collateral, proceeds thereof or proceeds of any of Borrower's assets to be on file in any public office.

10.0 Events of Default; Acceleration. Any or all Obligations shall, at the option of Bank and notwithstanding any time or credit allowed by any instrument evidencing a liability, become immediately due and payable without notice or demand upon the occurrence of any of the following events of default;

10.1 default in the payment or performance of any obligation, covenant or liability contained or referred to herein or in any note secured hereby;

10.2 any warranty, representation or statement made or furnished to Bank by or on behalf of Borrower proves to have been false in any material respect when made or furnished;

10.3 any event which results in the acceleration of the maturity of the indebtedness of Borrower to others under any indenture, agreement or undertaking;

10.4 loss, theft, damage, destruction, sale or encumbrance to or of any of the Collateral, or the making of any levy, seizure or attachment thereof or thereon;

10.5 death, dissolution, termination of existence, insolvency, business failure, appointment of a receiver for any part of the property of, assignment for the benefit of creditors by, or the commencement of any proceeding under any bankruptcy or insolvency laws by or against, Borrower or any guarantor or surety for Borrower, or entry of any judgment against them, or failure of any guarantor or surety of Borrower to provide Bank with financial information promptly when requested.

11.0 Rights and Remedies on Default. Upon the occurrence of any such event of default, and any time thereafter, Bank shall have the rights and remedies of a secured party under the Uniform Commercial Code in addition to the rights and remedies provided herein or in any other writings executed by Borrower.

12.0 Additional Security. Regardless of the adequacy of any Collateral which the Bank may at any time hold hereunder, and regardless of the adequacy of any other collateral which the Bank may obtain at any of its offices from Borrower in connection with any other transactions, any deposits or other moneys due from Bank at any of its offices to Borrower shall constitute additional security for, and may be set off against, loans secured hereby even though said loans may not then be due. Any and all instruments, documents, policies and certificates of insurance, securities, goods, accounts receivable, choses in action, chattel paper, cash, property and the proceeds thereof (whether or not the same are Collateral or proceeds thereof hereunder) owned by Borrower or in which Borrower has an interest, which now or hereafter are at any time in possession or control of Bank at any of its offices or in transit by mail or carrier to or from Bank or in the possession of any third party acting in Bank's behalf without regard to whether Bank received the same in pledge, for safekeeping, as agent for collection or transmission or otherwise, or whether Bank has conditionally released the same, shall constitute additional security for Obligations and may be applied at any time to Obligations which are then due whether by acceleration or otherwise.

13.0 General. Bank shall not be deemed to have waived any of Bank's rights hereunder or under any other agreement, or writings signed by Borrower unless such waiver be in writing and signed by Bank. No delay or omission on the part of Bank in exercising any right shall operate as a waiver of such rights or any other right. A waiver on any one occasion shall not be construed as a bar to or waiver of any right or remedy on any future occasion. All Bank's rights and remedies, whether evidenced hereby or by any other writings shall be cumulative and may be exercised singularly or concurrently.

13.1 Any demand upon or notice to Borrower that Bank may elect to give shall be effective when deposited in the mails or delivered to a telegraph, wireless or radio company addressed to Borrower at the address shown at the beginning of this agreement, as modified by any notice given pursuant to paragraph 7.1. Demands or notices addressed to Borrower's address at which Bank customarily communicates with Borrower shall also be effective.

13.2 If at any time or times by assignment or otherwise Bank transfers any Obligations and Collateral, or other security therefor, such transfer

shall carry with it Bank's powers and rights under this agreement with respect to the Obligations and Collateral or other security transferred and the transferee shall become vested with said powers and rights, whether or not they are specifically referred to in the transfer. If and to the extent that Bank retains any other Obligation or Collateral or other security, Bank will continue to have the rights and powers herein set forth with respect thereto.

13.3 Borrower shall pay to Bank on demand, together with interest at the highest rate allowed by law, any and all expenses, including legal expenses and reasonable attorneys' fees, reasonably incurred or expended by Bank in the collection or attempted collection of Collateral and in protecting and enforcing the Obligations and other rights of Bank hereunder.

13.4 Whenever there is no outstanding Obligation and no commitment on the part of Bank under any agreement which might give rise to an Obligation, Borrower may terminate this agreement upon written notice to Bank. Prior to such termination, this shall be a continuing agreement in every respect.

13.5 This agreement and all rights and obligations hereunder, including matters of construction, validity and performance, shall be governed by the law of Oregon.

13.6 This agreement is intended to take effect when signed by Borrower and delivered to Bank.

13.7 If anything in this Agreement is held to be illegal, then only that portion is void and not the entire Agreement.

14.0 Special Provisions. (If none, write "None"):

Not withstanding any of the foregoing, the security interest herein provided is limited to accounts receivable on construction contracts commonly referred to as "earned estimates" and excludes retainages and other miscellaneous receivables.

Reports covering said estimates are to be submitted to the bank on a monthly basis by the 15th of each month in sufficient detail to permit the bank to verify the same and otherwise in a form satisfactory to both partys.

Signed and Delivered to Bank on the day and year first above written.

Roy L. Houck Sons' Corporation
(Name of Borrower)

By _____
(Authorized Signature) President

Borrower

RECEIVED
JAN 7 - 1970
FOR FINANCE
E-181(23)
7289

January 6, 1970

Roy L. Ronak Sons' Corp.
P. O. Box 672
Salem, Oregon 97308

Re: Contract No. 7185, Line Section
Contract No. 7215, E. Fork Coquille River (Myrtle Point) Bridge Section
Contract No. 7281, Saddle Mtn. Jct.-Little E. Fork Nehalem River Section

Gentlemen:

Enclosed for your information are copies of three letters which we have received from The Aetna Casualty & Surety Company relating to the above contracts; these letters are dated respectively December 30 and 31, 1969.

This is also to inform you that the U. S. National Bank of Oregon has notified us that they claim a security interest in any earnings under the above contracts by virtue of a security agreement with you dated September 26, 1969, and a financing statement under the Uniform Commercial Code, apparently filed in the offices of the Marion County Clerk and the Secretary of State on October 1, 1969.

By reason of these conflicting claims of the surety company and of the bank, we will not be in a position to release any payments on the above contracts until this dispute is resolved.

Very truly yours,

Floyd Henry, Secretary
OREGON STATE HIGHWAY COMMISSION

AJ:cr
Enclosures

bc: R. L. Porter
F. B. Klaboe
G. E. Rohde Attn: Alan Johansen
V. E. Shoeg

7289 C

RECEIVED
JAN 8 - 1970

Memo of meeting held 1:30 p.m. Monday, January 5, 1970, in the office of George Rohde, Chief Counsel, Oregon State Highway Division of the Department of Transportation. Present at the meeting:

FORM
F-181(23)
7289

Lee Crawford, Atty at law
George E. Rohde, Chief Counsel.
A. Johansen, Staff Attorney
L. I. Lindas, Staff Attorney.

Mr. Crawford, representing the United States National Bank of Oregon presented Mr. Rohde with a copy of a financing statement which indicates, he says, that the bank has a security interest in a progress payment check, in the amount of $140,000, due on contract 7215.

The Surety, Aetna Life and Casualty Co. had previously, by letter, requested the check be not paid to Houck Sons Co., their principal, due the the failure of the latter to pay labor and material bills incurred in connection with the performance of Contract 7215. A like letter has been forwarded to the State with respect to any payments due their principal on contracts 7185 and 7289.

Mr. Crawford stated that his client has a security interest in the check for $140,000 that is greater than that of Houck's surety, their position being that the rights of the surety, if any, do not arise until after payment by the latter of debts of its principal, which has not been done as yet.

The financing statement is being furnished the State so as to put the latter on notice of the claim of the United States Nat'l Bank.

Mr. Crawford also requested, ~~to the~~ he be furnished copies of the letters delivered to the State by the surety. Mr. Rohde stated he would want to talk to an officer of the Houck Corp. first and secure their consent before so doing. Mr. Rohde thereupon call Carlos Houck. (See Rohde's memo re: his conversation with Mr. Houck)

Mr. Crawford was firm in his conviction that the bank had perfected a security interest in the earned estimates of the Houck Corp. relative to all of the check of $140,000.

Mr. Crawford further advised that representatives of the bank and the surety were meeting tomorrow (1-6-70) and that possibly the entire matter would be resolved at that time, or, if this was not possible, the situation might deteriorate to the point litigation might result.

L Lindas

L I Lindas
Staff Atty.

NOTED
G. E. ROHDE

RECEIVED
JAN 8 - 1970

E-181(23)
1249

1289

MEMO
Monday, January 5, 1970

Mr. Lee Crawford, representing the U. S. National Bank came to this office to confer with the undersigned relative to partial payments due Houck Sons Corp. on contracts with the State Highway Commission. Mr. Lindas was present at the conference and has dictated a memo as to the discussion held.

During the course of the discussion Mr. Crawford requested copies of the letters delivered to the State Highway Commission by Aetna Casualty notifying the State of their indemnity agreement.

I informed him we did not feel free to do so without the consent of Houck Sons Corp. Mr. Crawford concurred in my calling the Corp. office. Mr. Roy Houck was not in, but I spoke to Mr. Carlos Houck. He informed me it would not be his desire that we send a carbon copy to the bank along with our letter to the Corp. advising of the notice received.

He did state that upon receipt of the letter from the State Highway Commission he would give Mr. Crawford a copy. This appeared to satisfy Mr. Crawford.

G. E. ROHDE
Chief Counsel

RECEIVED
JAN 29 1970
FOR FILING
1-2-70
(9:30 a.m.)

1-2-70

Floyd
F-181 (23)
7289

Sexton, U.S. Natl. Bank in Portland re-Royl. Houck Sons Corp. He said that he was told the State was holding up payments on Houcks jobs. I told him yes, at the written request of the Surety.

Sexton asked for the job descriptions of Contracts 7289 and 7185, he already had the info-on #7215 —

I referred Sexton to Rohde —

Ceuth.

Dec 31, 1969
10:30 AM

Phoned Clarence Haverland who works for John Here in Accty re status of payments on Houck Contracts 7185 and 7289. He called back, said 7185 was in process and estimated the check would be ready about Jan 6, 1970. Nothing in process on 7289. Asked him not to release checks until cleared by Rohde or myself. He said they already had that understanding.

F. Garey

solution. Houck said no. Query pointed out to Houck that in his 22 years in the Secretary's office this was the first time he had seen a Contractor and his surety at loggerheads, usually they tried to work things out together. Houck left about 11 AM. The check was retained by the state.

J Query

STATE OF OREGON

MICROFILMED PUBLIC RECORD

(In accordance with the provisions of ORS 192.040 through 192.070)

*Name of Agency: Oregon Department of Transportation

Title of Record Series: Construction Contracts

Arrangement of Records: By Contract Number

Index:

INDEXING: Begins with: Contract #7276 folder #5 Ends with: Contract #7289

FLASH CARDS: Begin Each Contract

Remarks: #7276 folder #5 continues from reel 140
#7289 continues on reel 142

Reel No. 141 Reduction Ratio 21:1 Project No.

Camera: Name Bell & Howell Model File Master Film Recordak AHU MICROFILM 1460

CAMERA OPERATOR'S CERTIFICATE

Certification: I hereby certify that I have on this 20th day of May, 19 81 photographed the documents appearing on this roll of film, that they are true copies of documents, found in the record file described above, and that the integrity of the above described record file has been maintained on the film by microfilming each document in the exact order in which it was found in the file - with the exception, if any, of documents omitted because of technical difficulties and/or by error, as indicated on the film in the cross-reference notes or retake certificate.

I hereby further certify that the microfilm on which these documents are recorded was procured as permanent film of the slow burning cellulose ester or polyester type known as safety photographic film, conforming to applicable standards of the American National Standards Institute; and that the processing conforms to the standards for permanent film; and that samples of film processed by this service are periodically tested.

Signature Silvar Storm